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MEDICAL AND SURGICAL REPORTER.

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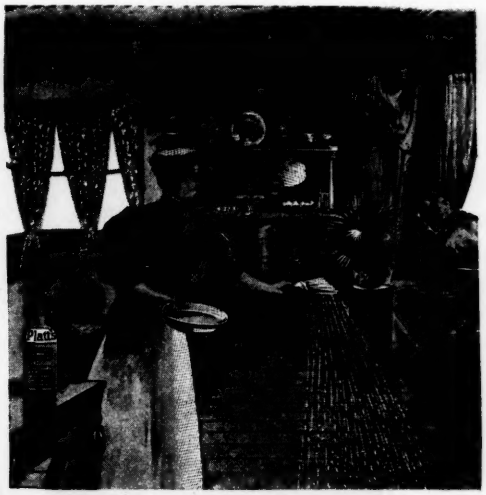

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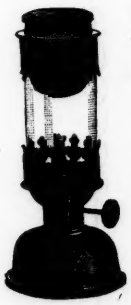

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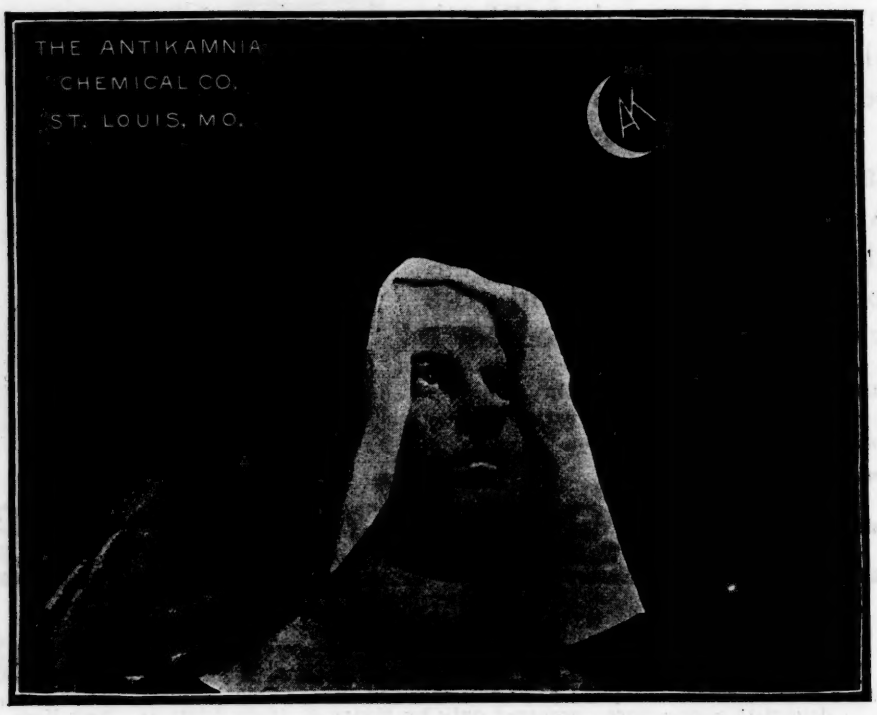

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Dr. John Harris Jones, in the *N. Y. Med. Journal*, says: "There are few drugs which exhibit so pronounced a **predilection to act upon certain structures of the body as belladonna.** Among its favorite tissues, those of the female sexual organs may be mentioned: its employment is followed by more or less benefit in every disease to which these parts are liable. It has fallen to the lot of almost every practitioner to be consulted by married women as to the cause of their barrenness, though they enjoy the best of health, and have never suffered from any irregularity of the sexual apparatus. To such on many occasions belladonna internally proves a boon, and after some weeks they become pregnant. This happens so often that I am constrained to regard the occurrence as something more than accidental. I do not venture to theorize upon the action of belladonna in such cases, but merely mention that I have observed the external genitalia become more relaxed, and the os and cervix uteri somewhat softened and pliable."

Tuberculosis.—Although the human race continues to sicken and die of pulmonary tuberculosis, it is the consentaneous opinion of the medical profession, as shown by reports gathered from all parts of the world, that we have in creosote a remedy capable of arresting a certain percentage of cases. This drug should, therefore, be administered carefully, systematically, and continuously in every case of consumption, provided it is well tolerated and there is no contraindication or idiosyncrasy as to its action.—CROOK.

Black Oxide of Copper as an Anthelminthic.—Sass (Medish Weekblad, 1897, No. 20; Journal des praticiens, November 27, 1897) calls attention anew to the use of black oxide of copper, first recommended by Hager, in 1888, as a remedy for tapeworm. It is given in the form of pills made according to the following formula:

℞ Black oxide of copper..... 90 grains;
Prepared chalk ..... 30 "
White clay ..... 180 "
Glycerin ..... 150 "

M. Divide into 120 pills. From eight to twelve pills are to be taken daily. For a week the patient takes two pills four times a day, and for the second week three pills four times a day. During all this time he must abstain from taking anything acid. At the end of the two weeks a good dose of castor oil is given.

For children the following formula is employed:

℞ Black oxide of copper..... 75 grains;
Prepared chalk ..... 15 "
Magnesium carbonate ..... 15 "
Tragacanth ..... 150 "
Glycerin ..... 75 "
White sugar ..... 600 "
Water ..... a sufficiency.

M. Divide into fifty pastilles. Two or three to be taken daily. At the end of three or four days the *debris* of the tænia appear in the stools, and the symptoms caused by it disappear. This treatment requires no rest in bed, and it is particularly recommended for cases that have proved refractory to other remedies.—*N. Y. Med. Journal.*

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MEDICAL AND SURGICAL REPORTER.

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ORIGINAL ARTICLES.

SOME PHYSIOLOGIC AND PATHOLOGIC OBSERVATIONS CONNECTED WITH DISEASE AND INJURY OF THE CERVICAL CORD.

SAMUEL WOLFE, A.M., M.D.,* PHILADELPHIA.

The complex anatomic arrangement of the fibers which enter into the nerves of the upper extremity, in the brachial plexus, makes it difficult to ascertain their relation with the cervical nerve-roots and with the corresponding segments of the cord. Quite perplexing problems, both in physiology and pathology have thus arisen. The subject has been elucidated in various ways. I may mention the experiments on animals, especially those of Ferrier and Yeo on monkeys; the observation of cases where a portion or the whole of the upper extremity was congenitally absent; and of cases where an amputation of the part had led to a corresponding atrophy of cells in the anterior horns, and degeneration of nerve fibers. Then again the cases in which restriction of disease to a single nerve root or to a very restricted portion of the anterior cornua, have allowed the carefully studied symptoms to be related to the lesion, and what is of more importance still, have allowed wasted muscular fibers to be definitely connected with certain degenerated nerve fibers, and these in turn with atrophied cells in the cornua.

Another source of information, and one which has probably been too much neglected, is the careful observation of the paralyses which occur in fractures and dislocations of the vertebrae, at different levels, in the cervical spine. Associated principally with the study of three of these cases, occurring within a year, is the subject matter of the present paper. Much still remains to be settled, and any facts, however insignificant, connected with this subject, and even speculation in regard to the origin of the symptoms, may not be altogether useless.

Where pressure on the cervical portions of the cord exists in a sufficient degree from a displaced vertebra, or from a fragment, or any other cause, we would, of course, look for complete paraplegia, with paralysis of all portions of the trunk and anesthesia of the same regions. The breathing is diaphragmatic if the pressure falls below the level of the third vertebra, the intercostals being paralyzed, while the phrenic fibers have escaped. In the upper extremities the paralysis will be determined by the extent and symmetry of the cord lesion, and its characters nicely adapted to the level of the segment or root that is compressed.

In passing I may remark that where there is absolute paraplegia, and otherwise absolute anesthesia, a certain remnant of the localizing sense seems disposed to remain. In the case of a carpenter, aged 57, who fell from a building to the ground, a height of about eleven feet, in whom there was a very extensive comminuted fracture of the fourth, fifth and sixth vertebræ, the bones being literally ground into fragments, there was, in spite of complete loss of pain, touch, and temperature sensibility, a disturbed sense of presence and locality in the lower extremity. While the legs were lying perfectly limp and extended in the bed, he spoke of having the feeling of their being bent at the knees, and resting on the soles of the feet. This case, which I was permitted to study through the courtesy of Dr. Boger, in the surgical wards of the Samaritan Hospital, I shall again refer to. He died on the third day after the accident.

In the case of a boy of 19, who died at the German Hospital some weeks after the accident, which fractured his fifth vertebra, there was also the sensation of bent legs, while otherwise the anesthesia was complete.

It might be expected that the paralytic symptoms mentioned would, in these cases, be absolutely immediate. But such is not always, perhaps not generally, the case. Time is required in their development in such a way as to indicate that mere mechanical pressure is not alone the factor which results in the non-conduction, but that there are closely following changes of a molecular or structural nature, which are necessary to complete the blocking to the passage of the centripetal and centrifugal impulses. Even where the cord is very extensively torn in its transverse extent the onset is not so sudden as might be anticipated. Watts reports a case[1] where the autopsy showed the cord with its mem-

* Physician to the Philadelphia and Samaritan Hospitals.

1 *British Medical Journal*, March 13. 1897.

branes torn across its left half, at the level of the articulation between the sixth and seventh cervical vertebræ. The patient was a cart-driver, and fell from his cart. After the accident, he walked a mile to his home, put away his horse and cart and sat down by the fire. Three hours after the accident, with considerable rapidity, but yet with sufficient deliberation to allow of the patient's carefully stating the succession of the symptoms, the right hand, then the left hand and then the legs became paralyzed.

In Dr. Boger's case, the man arose after the accident and walked a short distance, although the paralysis of all the muscles of the lower extremities and trunk was absolutely complete by the time he reached the hospital, which was within an hour after the accident.

In the case at the German Hospital, where the motor loss in trunk muscles, and the muscles of the lower extremity was subsequently complete, there seems also to have been some retention of power for a short time after the accident, in the trunk muscles at least. The accident was the result of diving into shallow water, his head striking the bottom. His companions said he rose out of the water and splashed about a short time before he fell back unconscious, which would evidently have been impossible, with all the muscles below the shoulder paralyzed.

It seems rational to accept the view, that the degree of compression in these cases is seldom sufficiently complete, to immediately produce the paralysis to the full extent, which occurs after a short time has elapsed. A certain amount of organic change of, possibly, an inflammatory nature must have time to ensue, the assumption being that the inflammation alone would not, without the compression, be efficient in so short a time. In other words, the earliest inflammatory changes in compressed nervous tissue, will result in a degree of paralysis, which is only coincident with more advanced inflammatory changes, existing independent of compression.

It would appear that the same grade of injury to fibers ministering to different functions, will, in the one case, affect more profoundly than in the other, causing in the one complete, and in the other only partial loss of function. There may be a certain relation here to evolutionary phenomena. There is a law that those later acquired in the process of development, and, consequently, the higher functions, are the more easily lost. That is, they are less resistant to destructive influences.

Thus we find that the paralysis being otherwise complete, there remains, nearly always, a slight degree of flexor power in the forearm, and adductor power in the arm. In Dr. Boger's case, when the arms were passively extended, they could be slowly flexed by the patient, and feebly pressed against the sides. In the case of Watts, already referred to, this same power of flexion remained, while extensor power was completely lost. These cases correspond with the usual observations of similar cases, as reported in medical literature.

The explanation usually given is that the fibers concerned in those movements which persist, are given off from the cord above the seat of injury. That many of the phenomena are thus satisfactorily explained is doubtless true. We have cases where the paralyses are limited very distinctly, so that the question of position in the scale of function cannot be applied. But where we have a high lesion, and yet almost invariably a feeble remnant of power left that connects itself with the most elementary movements, this conclusion as to an active factor in the result, forces itself on our attention. If it were simply due to relative height the enfeeblement would not be so great, and the advance of inflammatory changes would result in total abolition, which does not seem to be the fact. I am aware that it is claimed that movements have representation in a considerable vertical area in the ganglionic cord cell groups, rather than a short vertical area corresponding with the related nerve roots. But if this is the proper explanation, why should there be such total abolition of what may be regarded as the higher movements, as compared to the partial extinction only of the relatively elementary and lower movements?

Many facts in neuro-pathology can be cited to confirm this view. Among these are the predominance in the paralysis of flexor contractures, and the tendency to earlier recover and regain flexor power, both showing greater stability, and the power of maintenance under lower conditions of organization on the part of this more elementary function.

Other things being equal, with the same injury acting on the sensory and motor fibers of a nerve, the conducting power is more easily and earlier lost, and later and with more difficulty, regained in the motor than in the sensory fiber.

Electro-motor excitability of the extensor muscles, disappears earlier after death than that of the flexor muscles.

That the extensor muscles generally connect themselves with the higher and more advanced function, is evident in a very broad way. The erect posture of man, and the close approach to it in the animals nearest to him in the scale of development, is in itself very convincing. Let me call your attention also to methods of expression by gesture of the higher sentiments and passions, as involving extensor more largely than flexor movements, which again peculiarly connect themselves with the base, the selfish and the narrow.

The flexor processes are concerned in self-preservation, in administering to the wants of the individual, to self; in feeding, crouching, and with the movement of shame, cowardice and treachery. The extensor motions go out to others, to the community, to the race. They enter

into the presentation of noble thought and grand sentiment by the orator, and into gallant and magnanimous conduct by the hero. We display through them the more exalted passions, and the nobler sentiments and propensities, as anger, pride, charity, giving, leadership. The instinctive action of folding beloved ones in the arms, of embracing, of clinging, are flexor. Comedy shrinks and contracts; tragedy stretches, elongates, extends.

THE RÔLE OF URIC ACID IN CERTAIN TYPES OF NEURASTHENIA AND ALLIED STATES. AN EXPRESSION OF DISTURBED METABOLISM.*

F. SAVARY PEARCE, M.D.,† PHILADELPHIA, PA.

The complex chemistry of the human body seems as yet not entirely fathomed, although as scientific medicine advances, especially in the line of physiologic chemistry, we are having brought out little by little the secrets contained.

Details in such work are innumerable and one feels his weakness to demonstrate facts accurately; nevertheless, by prolonged experimentation somewhat regular rules may be formulated. Inaccuracies must always creep in from any series of tests, but should not mar the validity of the whole.

In a paper on the study of peptonuria and indicanuria[1], which Dr. John H. Musser and the writer presented to the *Philadelphia County Medical Society*, this difficulty was very fully appreciated. We do not feel, however, like abandoning these lines of work in which it seems the future of accurate understanding of many symptoms in disease, must be elucidated.

Dr. Simon's investigations on indicanuria[2] prove in the main the statements held in that study. Our own further investigations have not warranted any other decision. The Biuret reaction for peptone has given a reddish tinge, meaning peptone with certainty, according to Von Jaksch, but this has been controverted by Von Noorden, who claims that peptonuria does not exist. Whether this has been proven seems an open question. If it is true that albumoses may give this same Biuret reaction, yet, as they, too, are also the results of tissue waste, it would still appear that the significance of excessive quantitive finding would, in a measure, demonstrate cellular waste in the body.

Elimination is not always equal to the formation of any metabolic substance. This is especially true of uric acid which, when being thrown off in excess, may yet not find its way from the body (the urine proving this), but may circulate, causing, as Haig points out, lithemic headaches and other expressions, or it may remain latent in some remote crevices of the body which are, for the time being, more or less uninfluenced by its presence. When over-accumulation finally occurs, or when some disturbing cause, as "catching cold," is the *vis a tergo* pushing the uric acid into the circulation, we have a urate and uric acid local or constitutional paroxysm, which may be of gout, headache, or a nervous chill.

It was suggested to the writer by Dr. F. X. Dercum that uric acid might be a factor in part of the symptomatology in some cases of that persistent, almost hysterically multiform ailment, neurasthenia. For example, some persistent headaches, after ocular defects have been carefully corrected, might, at times, be the result of uric acid irritation, when it is not one of long standing eye impression, as Dr. Mitchell proves.

It was first thought best to fix standards for health as to uric acid excretion during the twenty-four hours under different conditions of body activity. It were best to know the quantity of this substance excreted during a daily active life 1, on an ordinary diet; 2, on a milk diet; 3, on a meat diet, and 4, with exhausted states after a prolonged muscular effort, as compared with the conditions of tissue waste, found in one when at absolute rest. It would be necessary, of course, to have accurate weights during the time of such a study. The writer attempted this upon himself, but owing to numerous vicissitudes the beginning series was vitiated, and as no one in health could be obtained willing for the sacrifice, the project has not yet been consummated.

The interesting experiments carried out by Prof. O. P. Tower of Wesleyan University will be of great value bearing on ingesta and excreta, as indicated above.

The average normal standard for health, of uric acid excretion by the kidneys, is eleven grains *per diem*, and this if therefore taken as the basis for gauging and comparing the variable amounts excreted by the kidney and recovered in the urin-analyses, made as the basis of this paper. The influence on uric acid excretion on an absolute meat diet has been especially desired by Dr. S. Weir Mitchell, who has thrown out valuable suggestions during this study. A certain negative value of the work already done, is the main object of this presentation.

Experiments herein contained are relative to nervous states alone. In the one case, in which a detailed series of tests was made, there existed profound neurasthenia and tormenting intestinal indigestion in a male 28 years of age, of slender build, a deeply hypochondriac type of the protean affection. He was under the care of Dr. S. Weir Mitchell, and was placed in a private room in

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*Read before the Section of Medicine, 48th annual meeting of the American Medical Association in Philadelphia, June 4, 1897.

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1. See "The Diagnostic Value of Peptonuria and Indicanuria" in the transactions of The Philadelphia County Medical Society of June 13, 1894, Vol. 15.

2. See American Journal of The Medical Sciences, August, 1895.

the Infirmary for Nervous Diseases. In this terminal neurasthenic case we had the hearty co-operation of the patient, who had become quite disgusted with his existence and who was willing to shed any new light on the science of medicine for himself or mankind. We were thus able to carry out details pretty thoroughly with the advantages of an efficient hospital attendance. The urine for each twenty-four hours was carefully measured, and one-half pint of the amount was selected each morning for testing. The macroscopic and microscopic changes were carefully noted; the stools also were observed from time to time, as the diet, exercise, both active and passive (massage) effects varied. Temperature, pulse and weight were also recorded.

lead to inklings for more extended research. The blood alterations, too, must be observed further as a useful help in any metabolic study. The work was done in the Infirmary for Nervous Diseases.

Tests:—The quantitive test for uric or lithic acid (C_5 HC_4 N_4 O_3, mol. wt. 168) a dibasic acid, containing two replaceable atoms of hydrogen and found in the urine chiefly as sodium-acid-urate (Na H_5 H_2 N_4 O_3) is given by Prof. Theo. Wormley as follows: If albumin be present, remove by coagulation by heat. To 200 c.c. urine (if not clear, filter) add 5 to 10 c.c. HC_1, and allow to stand for twenty-four hours. Uric acid separates in crystalline form, some of the crystals float on the liquid. Collect the crystals

TABLE A 1. Case of M. M. Terminal Neurasthenia.

Amt. uric acid in 200 c. c. of the 24-hour urine.	Sp. Gr.	Urine Am. 24 hrs. Oz.	Albumen.	Color.	Reaction.	Other Constituents.	Stools.	Notes.
20 m g	1024	31	No.	Clear.	Acid.		Flaky.	Restless.
25 m g	1028	30	No.	Clear.	Acid.			
100 m g	1028	28	No.	Darker.	Acid.			
120 m g	1027	28	No.					Better.
120 m g	1028	29	No.	Cloudy.	Acid.			
50 m g	1013	78	No.	Light.	Acid.			
50 m g. *On solid food.	1028	36	No.	Higher.	Acid.		Diarrhoea.	Irritable.
20 m g	1022	50	No.	Light.	Acid.			
20 m g	1022	50	No.	Light.	Acid.			
80 m g	1012	44	No.	Light.	Acid.			
80 m g	1009	60	No.	Light.	Acid faintly.			
No gain.	1012	53	No.	Light.	Acid faintly.			Insomnia.
50 m g	1024	36	No.	Darkish.	Acid.			
20 m g	1025	48	No.	Clear.	Acid.			
20 m g	1023	33	No.	Clear.	Acid.			
20 m g. *Begun skim milk diet tonight.	1020	48	Drank much water.	Light and very clear.	Acid.	Phosphates.		
20 m g	1024	26	No.	Clear.	Acid.			
50 m g. Skim milk.	1009	82	No.	Light and clear.	Acid.			
100 m g	1010	69	No.	Light.				
20 m g	1020	69	No.	Clear.	Acid.			
70 m g		69	No.	Clear.	Acid.	Phos. and spindle cells	Extreme irritability.	
20 m g	1014	57	No.	Light.	Acid.			
310 m g	1013	60	No.	Light and green tinge	Acid.			
	1013	64	No.	Light and green tinge	Acid.			
100 m g	1012	60	No.	Light and green tinge	Faintly acid.			
20 m g	1012	64	No.	Clear.	Acid.		Flaky deposit,	Full doses Sod. Bicarb.
70 m g	1020	60	No.	Cloudy.	Alkaline.			
70 m g	1020	60	No	Cloudy.	Alkaline.	Phosphates.		
No gain.	1014	80	No.	Cloudy.		Phos.		
20 m g	1015	70	No.	Clearer.	Faintly alkaline.		Uric acid in stool.	Diarrhoea.
20 m g	1015	58	No.	Clear,	Acid			
20 m g	1010	70	No.	Clear.	Acid.			
50 m g	1019	56	No.	Clear.	Acid.			Better.
No gain.	1014	60	No.	Clear.	Acid.			Better.
No gain. Last day. Same liquid diet.		62						Better.
No gain.	1015	70	No.	Pale.	Acid.			Worse.
10 m g	1012	48	No.	Clear.	Acid.			
20 m g	1012	80	No.	Clear.	Acid.		Extra flakes in stool.	
20 m g	1014	74	No.	Clear.	Acid.			Much improved.
15 m g	1012	72	No.	Clear.	Acid.			

The following table shows a series of forty-two examinations out of fifty tests made (the others being checks) over an extended time. It is to be remarked, in deference to experimental medicine, that the patient made a favorable gain in his condition and removed to the West, where, according to recent letters, he shows continued improvement.

As to other cases selected for examination of this excretion, they ranged from mild to terminal neurasthenias, and from the so-called nervous body to those suffering from organic cord disease. One case of rheumatoid arthritis and several of rheumatic neuritis and of lithemic headaches were tested, some twenty-eight tests being made.

These experiments are too few to more than

on a washed and equipoised filter, using the filtrate to wash the crystals out of the beaker. Wash the crystals with small portions of water (5c.c.) at a time until the filtrate is free from hydrochloric acid. (Test with $AgNo_3$). Allow the crystals to dry on a filter paper. Separate the two equipoised filters and weigh. The weight obtained is the quantity of uric acid in 200 c.c. of urine. Divide the weight by two and the result is the per cent. If over 30 c.c. of water are required in the washing, then for every c.c. of water employed over 30 c.c., .000045 grams must be added to the weight of uric acid obtained.

The record of a male, aged 28, suffering from profound neurasthenia and tormenting intestinal indigestion, is here tabulated as to the amount of uric acid found in 200 c.c. of the whole daily

amount of urine, through an interval of two months.

On admission, the man was still suffering from many of the harassing symptoms of the terminal stage of the disorder which he had so long experienced, causing distress in mind and body with no lesions to account for them. His weight was 119½ pounds. The pulse was fairly constantly rapid and of moderate volume. His heart

TABLE A 2.

Wght.	Urine. 24 hours. 6 to 6 P. M.		Stools.		Diet.	Memoranda.
119½	4.3 to 4.4.	ox. xxxi	4.2			Rest. Massage daily.
119½	4 4.45.	xxx	3.	ii		
120½	4.4.45.	xxviii	4. Enema.			
121	4.5.4.16.	xxviii	5.	i		
122	4.6.4.7	xxviii	6.	i		
122½	4.7.4.8.	xxix	7.	i	Milk 54 oz. daily	Around house.
123½	4.8.4.9.	xxix	8.	i	6 a. m. 8 p. m. Milk lxx daily.	
121¼	4.9.4.10.	lxxviii	9.	i		
120¾	4.10.4.11.	lxxviii	10. 1 Enema.		6 a. m. 8. p. m. Milk lxx daily.	
120	4.11 4.12.	lxxxiv	11.		Milk f. oz. lxxx daily every 2 hours. 10 oz. doses.	
119¾	4.12.4.13.	lxiv	12. 1 Enema.			4 14.95. Walk and semi-"rest."
119¾	4.13.4.14.	lxii	13.			
118¾	4.14.4.15.	lv	14.	i		
119	4.15.4.16.	lx	15.	ii		(See notes on other page.)
119¼	4.16.4.17.	lix	16.	i		
119	4.17.4.18.	liii	17.	i		
121	4.18.4.19.	xxxvi	18.	i		
120¾	4.19 4.20.	xlviii	19.	i		
121¾	4.20.4.21.	xxxiii	20.	i		
121¾	4.21.4.22.	xxxvi	21.	i	Skim milk 70 oz. daily.	
121	4.22.4.23.	xlviii	22. Slight.	i		Absolute "rest."
119	4.23.4.24.	lxxxii	23.	i		
119	4.24.4.25.	lxiv	24. 1 Enema.			
119	4.25.4.26.	lviii	25. Enema.	i		
119	4.26.4.27.	lvii	26. Lime water.	i		
118½	4.27.4.28.	lxii	27. very slight.	ii	4.29.95. Increase milk.	xc oz. daily. Skim milk.
118¼	4.28.4.29.	xxi	28. Slight.	i		
	4.29.4.30.	lxiv	29.	i		
118	4.30.5.1.	lvii	30.	i		
117¾	5.1.5 2.	xlviii	5 1			
117	5 2.3.	lviii	2.	i		
117¼	5.3.4.	lxviii	3.	i		
116½	5.4.5.	lviii	4.	i		
116½	5.5.6.	lxiv	5.	i		
115¾	5.6.7.	lxiv	6.	i	3 raw eggs, bread milk daily, n.	d and butter in b.
116½	5.7.8.	l	7. Free.	i		
116	5.8.9.	lx	8. Slight.	i	milk 8 times instead of 9 times.	
115¾	5.9.10.	lii	9.	i		
114¾	5.10.11.	xxxvi	10.	i		
115¾	5.11.12.	l	11.	i		
116	5.12.13.	lviii	12.	i	Rice, milk toast p. and n.	Rennet whey once daily.
115	5.13.14.	xiii	13. Free.	i		
117	5.14.15.	lxxx	14.	i		
117¼	5.15.16.	lxvi	15.	i		
117¾	5.16.17.	lxx	16.	i		
117¾	5.17.18.	lxxii	17.	i		
118¾	5.18.19.	lxviii	18.	i		
119	5.19.20.	lvi	19.	i	Soft diet, oz. viii 8 times daily.	Sat up ½ hour and 10 min. b. d
119	5 20.21	lxii	5.20.	i		
119¾	5.21.22.	lxiv	21.	i		
119¾	5.22.23.	lxv	22.	i		Walk out 20 minutes daily.
120¾	5.23.24.	lx	23.	i		
121½	5.24.25.	lvi	24. Slight.	i		
121¾	5 25.26.	xiii	25.	i		
122¾	5.26.27	lii	26.	ii	House, milk at and bet. meals.	
122¼	5.27.28.	lxx	27	ii		
122¾	5.28.29.	xlviii	28.	i		Walk out ½ hour b. d.
124	5 29.30.		29.	i		
121½	5.30.21.		30.	i		
	5.31.6.1.	xxxvii	31.	i		
122	6.1.6.2.	xxviii				
122½	6.2.6.3	xxxvi	6.1.	i		
125½			2.	i		
123¾						

was normal. The temperature kept near that of health. He was placed on house diet, without restrictions as to exercise for the next six days, no treatment being administered. He then passed 30 ounces of urine daily; on an average the uric acid excretion averaging 50 m.g in 200 c.c. Stools averaged once daily. They were soft, containing some mucus and flakes of undigested food. Abdominal tympanites and great distress—a vague feeling of pressure,—were no doubt, symptoms of disturbed metabolism, like retrocedent gout.

To this the added abnormal mental state portrayed a picture of disturbed functionation. Perhaps organic disturbance of the nervous system is, after all, the correct term to use, if uric acid or other poison is the cause. For this reason this one case was worked to every detail, the other series of cases being tested, more as checks to the experiments on the original. As is manifest, there is a wide fluctuation of the quantitative findings, which proves in itself that uric acid was a cause or result of the symptom complex.

Table A1 represents the amount of uric acid passed in twenty-four hours; its specific gravity, reaction, color, notes on the other constituents, and amount of uric acid recovered from 200 c.c. of the twenty-four-hour urine. This finding must be multiplied by six to record the amount of uric acid passed in twenty-four hours by his kidneys, taking 1200 c.c. as an average urinary daily excretion for him.

Table A2 carries out in detail over the same extended time, the weight of the patient, nature of the diet, the character of treatment, the food and exercise and the nature of the stools. Medication was withheld in order not to alter the normal or abnormal elimination of uric acid.

For four days the patient was put to bed on house diet, with the addition of gentle half-hour massage, and was allowed to walk around the halls for a short time. He gained three pounds during this time.

The urine remained an average of 30 ounces. The stools were easily kept free by enema. Uric acid recovered, averaged 50 mg. (This is less than half of normal excretion of the salt by the urine).

He was now put on 54 ounces of milk daily, the quantity being increased until he reached 80 ounces daily by April 14.

April 14, 1895. The uric acid now fell to an average of 35 mg. in 200 c.c. of the daily urine. His weight had gone down four pounds by this time, and the urine excretion had been increased from 50 to 80 ounces,—the specific gravity of the urine going down to 1009. The harassing abdominal symptoms, increasing tympanites, etc., continued. He was put on partial rest treatment with daily massage, continuing this large amount of milk and adding Hunyadi water in the morning, and essence of pepsin after meals, to aid digestion. His weight these days kept fairly constantly an average of 120 pounds —at least gaining one pound by April 23. The surroundings certainly favored normal metabolism, if it were to exist.

April 23. The urine was reduced during this lack of active exercise to 33 ounces. The uric acid averaged 20 mg. (one-sixth of normal), the specific gravity attained 1023, and the urine contained phosphatic deposit. It was only faintly

acid. The man was now put at *absolute* rest treatment, keeping up the gentle massage daily. Large enemas of lime water were given to control the extreme intestinal hyper-acidity. The man was placed on 72 ounces of skimmed milk in divided doses (every two hours). The weight went down to 119 pounds. The urine went up to 82 ounces (perhaps the injections increased this). The uric acid now began to vacillate, on the whole increasing, reaching an average of 55 mg. Specific gravity, 1020, with considerable phosphatic deposit. Ice-bags had been applied to his abdomen constantly, to relieve distress and an occasional A.B.S. pill given at night. The quantitative finding of uric acid was thus, as a rule, below the normal, but varied greatly in amount collected.

TABLE B. Miscellaneous Cases. (Organic and Neurasthenic Cases.)

Amt. Uric acid in 200 c.c. of 24-hour urine.	Sp. Gr.	Albumen.	Color.	Reaction	Other constituents.	Stools.	Notes and Case Neurasthenia.
116 m g	1025	No.	Clear.	Ac.	Phos.	Normal.	Sod. phos. gr. xxx. Sod. salicyl. gr. xxx.
120 m g	1022	No.	Clear.	Ac.	Slight deposit.		Rheumatic neuritis.
125 m g	1030	No.	Clear.	Acid.	Ox. and phos.		"
25 m g	1012	No.	Dark.	Ac.			
150 m g	1014	No alb. no glucose.	Dark and clear.	Ac.			Sod. phos. gr. xxx. t.d. Sod. salicyl added no liquid.
10 m g	1028	No.	Dark.	Ac.			"
10 m g	1028	No.	Dark.	Ac.			"
110 m g	1028	Tran.	Dark.	Ac.	Uric ac., no glucose.		Locomotor ataxia.
300 m g	1020	No.	Dark.	Ac.			"
100 m g	1020	No.	Clear.	Ac.			Nervous gen. (Improved) neurasthenia.
200 m g	1026	No.	Clear.	Ac.			"
150 m g	1026	No.	Clear.	Ac.			"
80 m g	1022	No.					"
120 m g							Locomotor ataxia.
170 m g	1022	No alb. no glucose.					
100 m g	1026	No.	Clear.	Ac.		Flakes.	Nervous headache.
50 m g	1020	No.	Clear.	Ac.			"
50 m g	1020	No.	Clear.	Ac.			"
100 m g	1020	No.	Dark.	Ac.		Typhoid	Aged 20.
40 m g	1030	No.	Light straw.	Ac.		Normal.	
50 m g	1036	No.	Light straw.	Ac.			Two examinations.
Few crystals	1018	Much.			Grain casts some narrow.		

*In this table more uric acid was recovered and there were no marked intestinal symptoms in the cases. This adds to the force of the statement that uric acid is thrown off by the bowel where marked gastro intestinal irritation does exist as in Table A1.

Without further elucidation (for details of the work see tables A1 and A2) let it suffice to state that this man remained at "*rest*" for one month on varied diets with but little medication and was then gradually gotten up and about. Massage, electricity, rest nor activity seem to have any effect on the ever-changing amounts of uric acid recovered from the urine. The average amount of uric acid recovered from 200 c.c. of the twenty-four-hour urine was 91.3 mg., which amounts to between six and seven grains of uric acid recovered from the whole amount of urine passed in the twenty-four hours. This is considerably less than the normal (gr. xi) and in itself gives a clue to the role that uric acid *must* play in neurasthenia. The only question of doubtful nature is as to *post hoc* or *propter hoc*.

Table "B" gives records of a number of miscellaneous cases, mentioned above, where the same ever-varying amounts of uric acid were recovered in tests made during the past year.

From the above study we draw the following conclusions:

1. Disturbed metabolism is the cause *sui generis* of a number of symptoms in many constitutional diseases.

2. This interference with the proper physiologic oxidation of food products, especially of proteids, and the retention of these suboxidized products in various parts of the body all along the line of the arterial tree is again the *secondary* cause of added symptoms in diseases (as neurasthenia essentialis) where the initial symptoms could not be placed to disturb metabolism.

3. Whether uric acid oxalates, alloxur bodies, or other by-products, are or are not found in excess in the urine (uric acid diminished in our study) we *must*, judging rationally, assume that in many cases of nervous disease, such substances are retained in the body and are the causes of many of the somatic phenomena in such chronic maladies.

4. Finding, as we have, such variations in the quantitative findings of uric acid in the same case under apparently similar symptomatology; and with much variation in diet, exercise, etc., we must assume that the cause is not dietary indiscretions, nor idiosyncrasy, in many cases.

5. As regards uric acid in neurasthenia and allied nervous states, it must exert a considerable etiologic influence on essential cases. It must be, no doubt, the cause of many *secondary* (symptomatic) cases of these same maladies. This would explain *hysteria* in organic brain disease in large part.

6. Back of it all we therefore have the weakened neurons (the element of tire or exhaustion beautifully proven by Hodge) hereditary or acquired, perhaps well intact in the so-called essential cases of nervous exhaustion. Later, becoming greatly exhausted, these millions of nerve cells cease to control metabolism—uric acid is formed and with other products, as peptone, albumoses, neucleins, and the like, all circulating in the blood, produce a complex jungle, causing every variety of symptom in the then toxic individual; which the refinement of physiologic chemistry is yet too crude to detect *in toto*.

7. The failure to recover the so-called normal urinary amount of uric acid is in part due to its being retained in the system in ever varying amounts; and also from the fact that uric acid is excreted by the gastro-intestinal tract, and that uric acid is sometimes in part (as we believe now in our studied case) the cause of intestinal irritation in cases of neurasthenia. (See reference No. 8.)

8. Other leucomains, ptomains, and the acrid gastro-intestinal secretions are together causes of such symptoms in some cases of neurasthenia, or at least the cause of exacerbations of symptoms already existing.

9. Certain persistent occipital headaches not relieved by proper glasses or eye-treatment may be due to uric acid deposited in the meninges.

10. In the treatment of neurasthenia the best results will be gained by observing the above indications.

Rest, isolation, massage, electricity, forced feeding even to peptonizing the large amounts of milk given; the change of scene, suggestion, personality of the physician, absence of worry; all are paramount for a successful issue of the case.

Correction of hyperacidity by lavage, bicarbonate of soda, phosphate of soda, relieving constipation, caring for the skin, the use of diuretics where the urine is scanty and high colored, and attention to the other enunctories, with at times a needed intestinal antisepsis, are also details to be watched by the physician who hopes to cure neurasthenia. Then the use of the Brown-Sequard, the thyroid, and other organic extracts should be tried in a persisting case where *everything* has been done as a means of possibly ridding the system of some hidden internal secretion that may be acting as an irritant. The use of soda salicylate I have seen do much good in neurasthenia, especially where vague shooting pains were tormenting.

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The Cuvier Prize of the Academy of Sciences, Paris, value 1,500 francs, has been awarded to Prof. Marsh, of Yale University. This prize is awarded every three years for the most noteworthy work published during that period on the Animal Kingdom or on Geology.

BLENNOSTASIN.

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Blennostasin, derived from bromin and cinchonidin, has been advocated as a superior remedy for coryza, hay fever and various affections of the upper respiratory tract characterized by hyper-secretion. The drug is a yellowish solid, readily crystallizable, the crystals being very large in size and of a light yellow color; it is soluble in the ordinary aqueous menstrua, but as it is intensely bitter to the taste, should be administered in the form of pills or capsules. It is claimed for this drug that in the treatment of coryza it is "particularly effective," and that it does not produce unpleasant effects like other compounds employed for a similar purpose.

In a certain proportion of cases, blennostasin is of value in controlling the excessive discharge of mucus from the nasal chambers in the early stages of an acute coryza. In one case of a male, with beginning coryza, one grain was used every hour, commencing at the stage of thin watery secretion. So long as the drug was being administered the secretion was held considerably in abeyance, but returned in increased amount when the drug was discontinued. At the same time a moderate degree of nausea was produced, which disappeared on withdrawing the drug. Another case in which it was used for a similar purpose was that of an elderly man, with an acute coryza, in which three grains of blennostasin every hour for two days aborted the "cold" and no untoward effects were observed.

This compound possesses the peculiar contractile effects of belladonna and atropin on the vaso-motor system of the upper respiratory tract, but is without the toxic action of the former drugs, although unpleasant symptoms seem to occur occasionally, as in the case of a young woman who was directed to take two grains of blennostasin in pill form every hour for an acute coryza. After three doses had been taken (six grains in all) there was pain in the chest, with a very uncomfortable feeling of constriction, nausea, and at the same time no effects were observed on the nasal secretion; as these symptoms were so severe, the woman refused to further use the remedy.

A minor unpleasant effect is a disagreeable taste in the mouth, observed several hours after the cessation of the use of the compound. This was especially well marked in one case, receiving three grains every hour, which promptly suppressed an acute coryza in less than twenty-four hours, and no unpleasant effects of the drug were observed except this bitter taste coming on the next day. This was seen in a number of cases and was not due to the direct action of the drug, as it was given in gelatine-coated pills and the bad taste did not make its appearance until a considerable time had elapsed after the last dose had been administered.

So long as the drug is taken every hour in three-grain doses, the secretions are markedly diminished but within a very short time after the drug is stopped the nasal discharge is as bad as before and, as the majority of patients with coryza seem to have an aversion to taking medicine every hour for several days, the results obtained are not so good as those seen with some of the older drugs used for the same purpose. The following case is typical of the results obtained by the use of blennostasin in the large majority of cases in which it is administered for the relief of the nasal discharge of coryza.

Mc.F., age, twenty-six years. Acute coryza in early stage of serious discharge, three grains of the drug were directed to be taken every hour. Seventy-five grains in all were taken by the patient and he stated that so long as he used the pills every hour the nasal secretion was much diminished, but so soon as he missed a dose it reappeared as before, and at the same time a mild degree of nausea was noticed. In conclusion, my experience with blennostasin has led me to believe that the drug is of much benefit in a small number of patients suffering with an acute excessive nasal discharge but in the larger proportion of cases, it is less valuable and frequently produced unpleasant symptoms when used in full dosage, while smaller amounts have but slight effect on the increased nasal secretion.

Medical Ethics.

We wish it to be distinctly understood that we have no objection to a code of medical ethics of the strictest character; but if we are to have one, we wish to have it clearly interpreted and its provisions rigidly and impartially enforced. We insist upon "equal rights to all, and exclusive privileges for none," and we shall never consent to a code which shall be merely a compilation of rot and claptrap to assist hypocrisy in practicing fraud.—*Louisville Medical Monthly.*

The Physician's Income.

Knowledge and skill in general practice have also increased, but the general practitioner's fee schedule is just about what it was fifteen or twenty years ago, and some places what it was thirty or fifty years ago, and he is about as slow and careless in collecting it. The specialist is more apt to get a cash fee, to get prompt pay, as well as bigger pay. The general practitioner should revise his fee bill and reform his business methods to meet the changed conditions. With the close competition and the constant demands upon the purse in the high-pressure civilization in which we are living there is scarcely a commercial enterprise or a professional practice which would prosper under the loose methods and indifferent management which characterize the business side of many a doctor's work.—*Cleveland Medical Gazette.*

Contemporary Review.

A Fatal Case of Thyroidectomy.[1]

Alarming symptoms often occur in cases of thyroidectomy within a day or two after a successful operation, which are believed to be due to the absorption of the products of the thyroid gland, in cases where only a partial removal has been made. The first case reported by the author was one in which a tall, slim girl, age 15 years, had a large parenchymatous goiter. The tumor was soft but not cystic, and did not pulsate. It involved both lobes. The heart was excitable, and a systolic bruit was heard at the apex, pulse 104. There was no dyspnea. The operation was done on December 3d, and the left lobe, with the isthmus, were removed.

Within a few hours afterwards the patient became restless and uneasy, the temperature gradually increasing until it reached 100. The pulse was 130, and respiration 26. The following morning the wound looked healthy. In the afternoon of the 4th the temperature rose to 103 and the restlessness and mental anxiety increased, breathing became more labored and there was a rise in the pulse rate. Later the symptoms of Graves' disease became more pronounced and increased in severity, death ensuing December 6.

There was a peculiar characteristic of the wound, from the fact that there had been no tendency to heal, and the cut edges looked fresh and around the edges there was a fluid of a watery character.

On autopsy the bases of the lungs were found to be congested with some tenacious mucus in the bronchial tubes. All the other viscera appeared to be normal except the liver, which was cirrhotic.

The second case was a woman apparently in good health at the time of the operation, January 18. The right lobe of the thyroid was removed without loss of blood. During the night following the operation, she became restless, respirations quickened, temperature 101, pulse 128. The day following the symptoms increased in severity. The wound was inspected and found to be discharging a great deal of a clear, watery fluid. The wound was packed and left open and the symptoms immediately improved. During the night, however, the patient became worse, temperature 104, pulse so fast it could not be counted, respirations 36. Another examination of the wound showed it to be filled with an excessive amount of the watery fluid. It was dressed every two hours. January 22 the symptoms ameliorated and gradual convalescence ensued.

These symptoms of thyroidism, after opera-

1 F. T. Paul, M. D., *British Medical Journal*, January 1, 1898.

tions for goiter, are due to excessive handling of the gland, increasing the amount of secretion, which is taken up by the lymphatics. To obviate this danger, ligating the isthmus early in the operation should be done. Handle the gland as little as possible, and should the symptoms of thyroidism supervene, open the wound promptly, irrigate it and pack with dry aseptic absorbent wool.

The Early Recognition and Management of Defective Development in Children.[2]

In order to rescue children from idiocy or defective development, too much care cannot be exercised in the proper education during infancy. The size and shape of the brain is not an infallible guide as to the child's intelligence. Anatomic development is only the sign of a defective *life* giving force. *Heredity* is a prime factor in the defective development.

To quicken the special senses any defect of hearing or sight should be corrected early. School-life often is a cause for defective development, because the child is thrown in competition with children of normal abilities. This leads to discouragement, recklessness, bad behavior and mortification of spirit. An imbecile, therefore, should, to improve its physical condition, be taught a trade or some household duty.

The defective development of character is of more importance than the mind. Severity of discipline should not be encouraged, but some range beyond the ordinary restrictions are to be allowed the mentally weak. The most rational treatment is to disregard as much as possible all stubbornness and perversity of disposition and to encourage those faculties which the child may comprehend.

Ante-Partum Hemorrhage with a Table of Fifty-one Cases of Placenta Previa.[3]

Fifty-one cases of ante-partum hemorrhage are introduced, covering a period of sixteen years at the Glasgow Maternity Hospital.

Case I. Some ovaritis, endomitritis and thickening of broad ligament before pregnancy. When in eighth month of pregnancy, hemorrhage came on at night. There was a marginal attachment, membranes intact and head presented. The membranes were ruptured artificially, hemorrhage stopped, and a normal labor ensued.

Case II. Was seized with ante-partum hemorrhage in sixth month of pregnancy. Hemorrhage again came on in ninth month. Later it proved to be a case of complete placenta previa, partially detached. Living child was delivered with forceps. Some post partum hemorrhage ensued, which was controlled with hot douches and hypodermics of ergotin. Symptoms of pulmonary embolism ensued on fourth day, but soon subsided.

Case III. Patient age, 30. Multipara. Hemorrhage near ninth month of pregnancy. Pulse 80 and feeble. Hemorrhage again came on, when vagina was plugged. Examination revealed marginal type of placenta previa. Bipolar version effectual and foot brought down and nature, three hours later, expelled a still-born child.

Case IV. Patient age, 24. Multipara. Several months advanced. Had given a history of intercurrent hemorrhages. On examination revealed beginning dilatation of os with partial detachment of placenta, which was detached with hand, version effected and a living child delivered. A second child then presented, version was resorted to and child delivered still living. Both children were in a transverse position. Mother made a good recovery.

Case V. Similar to case III, except child was saved.

Case VI. Age 33. Multipara. History same as case IV. Vagina plugged but subsequently were expelled, producing death of child on delivery. No post portum hemorrhage. Transfusion resorted to on account of exsanguination and the patient recovered.

STATISTICS OF 51 CASES OF PLACENTIA PREVIA.

Presentations.	Number of Cases.	Treatment.	No. of Times.	Deaths.
Cranial	Forty-three	Podalic version	Sixteen	Eleven
		Tampon and podal	Seven	Three
		Boms bags and podalic	Seven	Five
		Natural efforts	Six	Two
		Forceps.	Four	One
		Bipolar Method	Four	None
Transverse	Three	Podalic version.	Three	One
Breech	Two	Tampon & bomes bag	One	Two
		Leg brought down	One	
Elbow	One	Leg brought down	One	One
Leg & arm	One	Podalic version	One	One
Hand	One	Podalic version	One	None

Case VII. Age 38. Multipara. When seen hemorrhage had occurred for two hours. Lateral placenta previa. Vagina plugged. Later placenta stripped from uterus, ribs presented. Foot brought down, an hour later body expelled. Some post partum hemorrhage on account of extensive tear of cervix, possibly involving uterine artery. Tear stitched, transfusion resorted to, but on account of exsanguination patient died.

Case VIII. Age 27. Multipara. Hemorrhages irregularly for a week. Head presented, placenta detached at lower border of uterus. Vagina plugged. Bipolar version and foot brought down. Still-born child delivered.

No single method of treatment should always be followed in every case. Vaginal tampon is often quickest method, yet bipolar ver-

2 Louis Fangeres Bishop, M. D., *Jour. American Med. Ass'n.*
3 Roberts Jardine, M. D., *Glasgow Medical Journal.*

sion is one of best and effectual methods. It can be done when os only admits two fingers. Podalic version was generally resorted to in these cases. In lateral or marginal cases, often rupturing membranes suffices, when the head controls hemorrhages. Hot intro-uterine douches 1-300 creolin were given to control post partum hemorrhage. Ergotin hypodermically in some cases.

Twelve cases were complete placenta previa, and thirty-nine lateral. Of the former, two mothers died and ten were saved, while of the children five were alive and eight dead. Of the lateral, three mothers died and thirty-six were saved, while of the children fifteen were alive and twenty-four dead.

Hay Fever and Coryza—Their Relations and Treatment.[4]

There is an excessive accumulation of uric acid in the blood in patients suffering from hay fever, and it has been demonstrated that the proportion of uric acid to urea may be as high as 1 of uric acid to 23 of urea. Uricacidemia, then is one of the prime factors in the causation of hay fever.

While coryza and hay fever are often closely allied diseases, they are not identical. Hay fever is not an inflammatory disease, while acute rhinitis is. Haig says: "Uric acid in the blood contracts the arteries and capillaries all over the body, producing coldness of surface and extremities, raising tension of pulse and slowing the heart. Headache is a local vascular effect of the uric acid."

Another causative factor in the production of hay fever is the presence of new growths in the nasal cavities. When there is an accumulation of uric acid in the system and it is suddenly set free, a paroxysm of hay fever may be precipitated.

To prove the relation that existed between coryza and hay fever, a combination of morphia, atropia and caffein, in small doses was given, which averted an attack of each of the affections. Effervescing citrate of lithia also gave the same results in each disease. The diet should be principally of vegetables, abstaining from meats, sweets, wines and beer. Enjoin proper exercise.

Angina Pectoris.[5]

Whatever can be said in regard to the symptom of pain in organic diseases of the heart, it is always one of the concomitant symptoms of angina pectoris.

Usually its seat in angina is in the left breast, behind the sternum, across the chest, and also radiating down the left arm. With this pain there is a feeling of powerlessness, exhaustion and a fear of impending death on account of the agonizing cardiac distress. The two characteristic elements of angina are the severe pain and this fear of death.

The pain may be sharp, shooting in character, as if of a neuralgic nature, or it may be cramp-like, or often as if the sternum was being pinned to the spine. The exact seat of the pain is not known, but it seems probable that it is central, and the radiation of irritation gives rise to its extension in the spinal cord. At the end of the attack there is usually much flatus expelled and undoubtedly a distended stomach from this accumulation of gas is one of the exciting causes. The attack may last only for a few moments or it may last for hours.

Often in protracted cases of angina the pain is lost but the other symptoms are present. These attacks are often brought on by exertion and these soon pass off if the patient rests. Generally there is a feeling of exhaustion following these attacks. Indigestion, constipation and the like, may cause flatus, so that there is an interference with the rhythmical action of the diaphragm, thus obstructing the action of both heart and lungs. Angina has been known to cause mitral regurgitation and it is often present in aortic stenosis and in certain cases of diabetes of long standing.

The pathologic anatomy seems to indicate that there is a condition of fatty degeneration of the heart muscle and calcification of the coronary arteries.

The prognosis is always grave. The treatment should be directed on the same lines as that for fatty degeneration of the heart. The patient must not take sudden violent exercise, must avoid indigestible food, and correct constipation. The attacks may be cut short by the use of amyl nitrite or nitroglycerin. Often by inhaling a few drops of the former an attack may be relieved. A capsule containing a few drops is broken in the handkerchief and deep inhalations are made.

Often minim doses of the one per cent. alcoholic solution of nitroglycerin will avert an attack, and if kept up for some time may entirely prevent future recurrences.

The Electro-Therapeutics of Rheumatism.[6]

The electro-therapeutics of rheumatism are referable more specially to the sub-acute and chronic forms. In acute articular rheumatism no form of electricity is to be recommended. It is very valuable in the sub-acute and chronic forms and in gouty conditions.

There are five different modifications or phases of the current: (1) galvanism, (2) faradism, (3) static or Franklinic, (4) sinusoidal and combining the first two, (5) galvano-faradic. Of these forms the galvanic, faradic, galvano-faradic, and static forms, are the most reliable in the rheumatic condition.

4 Seth Scott Bishop, M. D., *Laryngoscope*.
5 Wm. S. Connery, M.D., *Medical Record*, January 8, 1898.
6 A. R. Rainear, M. D., *Codex Medicus*, Nov., 1897.

There are two ways of applying electricity: (1) constitutional, and (2) local. General or constitutional galvanism acts as a tonic or stimulant to the entire system. The local application to a muscle causes contraction and increased blood supply, thereby increased nutrition.

Where there is much muscular involvement, a primary and secondary current from the foradic coil of about three to five minutes' duration, applied directly to the muscles is sufficient. At first use currents of moderate strength, the electrodes being well moistened with a saline solution, the current gradually being increased to the maximum power of endurance. This to be followed by weak, interrupted faradic primary currents.

Where the joints are affected galvano-faradic currents are applied over the joints from ten to fifteen minutes' duration. In almost all cases of sub-acute rheumatism at least two sittings per week are necessary, while chronic cases require daily or not less than three treatments per week.

Case I. This case had previously been in bed for six weeks with inflammatory rheumatism. Subsequently the wrist-joints became enlarged and painful on pressure, and some of the extensor muscles of forearm were atrophied. A course of galvanic with occasional use of slowly interrupted primary faradic current, was kept up for two months, when the case recovered without deformity.

Case II. Had severe pain in lower part and back of thighs. Pain so bad often had to lie in bed. Great pain on rising from bed in the morning. There had been a history of rheumatism.

Galvanism was applied to back, the anode being placed on the upper dorsal and cervical regions and the cathode over the lunbar. At the end of three months' treatment no tender spots or pain was present.

Case III. Patient female, age 34. Complained of loss of power in left leg. History of rheumatism. Muscles of calf of leg and thigh much wasted, cold and moist. Sensation much impaired. Pain more intense when in bed and sitting erect for any length of time. Galvanism to entire limb was used every day, and at end of two weeks the pain ceased entirely. The atrophied muscles had increased in size and contractile power. Applications then made every two days, when limb soon reached its normal condition.

The Turkish Bath in Inebriety.[7]

From the earliest times bathing has been utilized as an important agency in the treatment of the sick, and as a preventive in disease. The most complete form of all baths is the Turkish bath. The impurity of the blood is very often promptly relieved by the sweating process.

The model institution for the treatment of the inebriate is yet to be built. It should be under the control of competent managers and the hot-air bath should hold a pre-eminent position in the treatment. Narcotics and opiates are to be entirely eschewed. Possibly the pioneer in this work was Dr. J. Edward Turner, who established an inebriate asylum in Binghampton, New York, in 1858. A prominent feature of the treatment of this institution was to so isolate the patient that no alcohol in any form could be obtained. It is well known that the action of alcohol as well as narcotics generally, retards tissue waste, thus overloading the system with impure products which the skin, kidneys and bowels should eliminate. We have no antidote for alcohol when it has once gained entrance into the system so that this product throws an additional load upon the internal organs. To go on in the way of transgression and then expect to be bailed out by some new remedy, is as likely to prove as futile in the future as it has been in the past.

Diseases for the most part are due to toxic substances circulating in the body, and there is a consequent want of proper oxidation, and therefore incomplete elimination. In many chronic conditions the system is filled with poisonous substances, due to failure of elimination.

One of the greatest faults from which we suffer is from improper foods and drinks, which lead to excessive alimentation. The ignorant believe that a stimulant is the proper thing to satisfy this craving. A late report of the Belgian Commission says: "First. All alcohol is injurious. It is never a tonic or stimulant and never increases the vital powers, but always lowers them.

"Second. No form of distilled spirits has any nutritive value.

"Third. The injuries of alcohol are always transmitted to the next generation."

Duroy, Perrien and Lallemand have found alcohol unchanged in the urine.

Kerr and Stümpell have proven that when alcohol is continuously taken, its chief action is nerve destruction.

Demme, of Berne, says: "According to the majority of investigators absorption and assimilation are diminished in rate by small doses of alcohol."

The moment the bather goes into the heated chamber he is called upon in the gentlest manner to discharge through the skin the refuse of his system. The longer he remains in the heat the more the foul material is thrown out from the blood and the alcohol can often be detected in the perspiration. These irritating materials are eliminated in this manner, thus taking the extra load from the kidneys.

The primary action of the hot-air bath is to relax the tissues of the body and thus invite a more perfect circulation to every part of the sys-

[7] CHARLES H. SHEPARD, M. D., *Atlantic Medical Weekly.*

tem. By this action every sense is quickened, the secretions are more thorough and the excretions more complete, the blood is supplied with more oxygen and carries nutrition to every organ.

The general body weight is reduced, the blood stream is freed from impure products, consequently the work of the heart is lessened and it in turn is better nourished. The peripheal arterioles are diluted and filled with blood, thus causing a corresponding emptying of the internal organs. Lastly, as a result of the alternate cold and warm drenching the vaso-motor energy of the blood vessels is increased, and under such conditions absorption and elimination have their most perfect opportunity and equalization of the circulation and upbuilding of the system crowns the work.

Warts and Suggestion.[8]

Warts constitute one of the most curious pathologic productions met with in medical practice. Up to late years, nothing was known of them, their occurrence, spread, persistence, and spontaneous disappearance were for many authors a subject of wonder. The scientific men denied them contagious properties, while the people said they could be inoculated from one person to another, and from one region to the other of the body of the same individual. Experience has since justified the popular opinion. In schools the passage of warts from child to child is easy to observe; in families, warts in children follow frequently the entry of a servant with warty hands. When a wart appears on one point it remains rarely alone; around it soon follow regular colonies, like a mother surrounded by her family. Cornil, Babès, and Kühnemann have described the microbes of these vegetations, and the transmission of warts from one person to another will soon be accepted by all.

Similar divergences of opinion as to the treatment exist between the public and medical men. Independently of the scientific method, there exists a long list of odd and absurd recipes which the public jealously keep in store and employ with conviction for the cure of warts; and, curiously enough, success frequently responds to the credulity of the crowd.

This double current of reason and superstition has existed from time immemorial. We have written proofs from the authors of classic antiquity that the treatment of warts was of the most fantastic nature. Thus, the application of the excrements of different animals was held in great esteem, that of the calf, the sheep and the dog, steeped in vinegar, were amongst the best known, while the urine of a boy under the age of puberty had a recognized value.

Naturally we smile at all this humbug, and shrug our shoulders in pity for what we consider to be profoundly humiliating for the human reason. Let us resist, however, this first sentiment, and endeavor to interpret this extraordinary credulity.

To begin with, is it possible to cure warts by these singular remedies? I myself do not doubt it, and proofs abound. M. Delbœuf, the eminent professor of Liège, quotes a singular example of cure:

"A neighbor in the country, who frequented a great deal my house, was afflicted for several years with a large wart seated at the root of the thumb. He tried everything to get rid of it, but ointments, incisions, caustics, and all other possible remedies were tried in vain; the wart continued to grow larger every week. He heard of an old woman, living in the neighborhood, who cured warts by the sign of the cross. At first he ridiculed the idea, but finally he consented to go to see her. The sorceress executed some cabalistic signs, and asked for money to make a nine-day pilgrimage, I forget where. My neighbor returned as incredulous as before, but glad at the idea that his friends would not torment him any more about the old witch. *On the ninth day the wart fell off!*"

Hardly had M. Delbœuf published this case (1896) than Dr. Bonjour, of Lausanne, came to the rescue with another no less authentic story.

"An old woman of my family had the reputation of being able to cure warts. When I was a young man she cured me of a large wart which had deformed the nail of the index finger of my left hand, and caused me great suffering and torment. I knew many persons whom she had cured of twenty or thirty warts at a time on each hand. She bandaged the eyes of the persons who sought her assistance, and bade them not to take it off while she was operating. They heard then her daughter enter the room and felt her touch the warts with a little wet rag, after which she went out. *All* the persons whom I knew to have submitted to the treatment were cured in from one to three weeks after a single sitting."

Professor Delbœuf tries to explain his case by attributing the cure to some kind of hypnotism, while Dr. Bonjour believes that suggestion in the waking condition is the true explanation.

We arrive now at another series of facts quite as enigmatic, and yet their reality cannot be contested. M. Vidal in his clinic at the St. Louis Hospital has established scientifically the existence of a mother wart and a colony of offspring.

Around the first is grouped the second, it is the result of contagion. The vulgar idea is thus justified, but the people do not stop there. They are convinced that to cure warts it is necessary to determine the oldest, that which has engendered the others, the mother wart in a word. If this one is destroyed the others soon disappear.

Such a belief seems absurd and was received with contempt by medical men, but experience confirms, however, the popular opinion. In a

8 Dr. Bousbel, *Medical Press and Circular.*

young girl who had several warts on her face, I touched the largest one, situated near the nose, with salicylic acid dissolved in alcohol and collodion. In eighteen days all the other warts disappeared although none of them had been touched. In another case the warts to the number of forty or fifty were situated on the hands. One more voluminous than the rest, cracked and bleeding, and situated on the thumb, I treated. In about three weeks all the others disappeared. Dr. Cellier, of Maas, remarked the same phenomenon, as he says "it is sufficient to remove one wart for all the others, be they fifteen or twenty, to disappear."

We are now going to make a step in another direction. We will no longer try to destroy the vegetation by direct application. We will administer internally an anodyne agent, such as calcined magnesia, and the warts will disappear. The initiator of this treatment is Dr. Lambert, of Haguenau. It was by chance he discovered it. Lambert was attending a woman for gastralgia, and one day he prescribed magnesia for her. During the treatment, the numerous warts which covered her hands, disappeared. Since then he employed systematically magnesia, at the dose of 12 grains daily, for warts, and frequently succeeded in removing them. Fonssagrives (1883) and Gueniot imitated the example with success. Professor Vulpian said one day in the Charité Hospital, "I do not know how magnesia acts, but it succeeds." In 1886 before the Société de Médecine of Lyon, Dr. Colrat related several cures obtained by magnesia, and at the same meeting Dr. Aubert mentioned the case of a woman cured of several warts by a drachm of sulphate of magnesia given daily.

On the other hand, other medical men have tried it and failed. Professor Soulier says, in his "*Traite de Therapeutique*," that he more often failed than succeeded; while M. Besnier confessed that magnesia never succeeded in his hands. In my opinion the explanation of these contradictory facts can only be found in an unconscious suggestion exercised by the doctor on a patient desiring to be cured. To prove this I employed various kinds of remedies (?) with equal success; infinitesimal doses of calcined magnesia, monosulphide of sodium, trinitrine, etc. Imossi treated ten persons with warts by the internal administration of tincture of iodine, and obtained a cure in each instance.

The mode of disappearing of the wart is remarkable, it does not break down nor desquamate; it becomes soft, shrivels, flattens, and disappears without leaving any cicatrix. The phenomenon is assuredly very curious.

The theory of suggestion can alone explain the why and the wherefore. Dr. Gibert, of Havre, cured warts in a boy, æt. 13, by simple suggestion, and Dr. Bonjour applies regularly the method of his aged relative. After a few cabalistic passes he tells the patient to forget all about his warts, and he adds, "I have always succeeded up to the present." In the hands of Drs. Gibert and Bonjour suggestion is employed with intention, but where it is not intended, the result is the same. Without doubt, the word suggestion does not reveal to us the intimate mechanism of the nervous centers, but it is convenient to use and sufficiently clear to be understood by all medical men. The cure of wart vegetations by suggestion proves that an impression of a psychical order can bring about a durable anatomic modification of the papillary bodies. It is sufficient to announce such a proposition for all reflective minds to comprehend its extreme interest.

A Peculiar Case of Staphylococcus Infection.[10]

A diagnosis was only reached after an illness of five years. The patient, a man of 56, had had gonorrhea and epididymitis thirty years previously. In 1892 an operation was performed for hemorrhoids, in which the cautery was used. For the first few days after the operation the catheter was required. Three days after the operation there was extreme urethritis and cystitis, when the bladder was washed out and recovery took place. The wounds healed, everything appeared right, and the patient was expected to get up, when pain and swelling returned in the left testicle, with epididymitis. Under the use of ice-bags, cold compresses, rest, etc., the symptoms subsided slowly. Then a swelling appeared with great pain in the supraclavicular region, with a phlegmon in the left upper arm, the infiltration from which extended over the whole region. On incision a thin, scanty pus escaped. The wound was packed, the redness disappeared, the swelling and resistance remained, and became complicated with neuralgic pain in the arm. These remained, and even became worse, so that morphia had to be given.

In August, 1892, the left supraclavicular region was filled out, the right rather more depressed, with a firm resistance. Pressure caused great pain, the left supraclavicular glands much swollen. In time the pain extended to the right arm, the neck became stiff, so that it could not be extended backwards. Improvement took place after a four weeks' course at Nauheim; but still the left arm could only be abducted to 40 deg. In December matters became worse, the neck being slightly thickened. In February, 1893, an abscess appeared near to and just below the bottom of the sternum, with pain and tension. The patient would not allow an incision. The abscess receded of itself until April, when it increased again with the spondylitis of the fourth and fifth dorsal vertebræ, and prominence and pain, on pressure over the spinous processes. A plaster corset was applied, and the

10 WOLLEMUTH, *Medical Press and Circular.*

patient sent to Wiesbaden, where Volkmann's apparatus was put on.

The diagnosis had hitherto lain between tuberculosis, gonorrheal arthritis, and syphilis. At Wiesbaden, chronic articular rheumatism was diagnosed, but the patient became worse under treatment, and it had to be stopped. He had then lost 30 lbs. in weight. In July, 1893, the author saw the patient again; he sat in a reclining chair with his shoulders elevated, the chin fixed to the sternum, with complete inability to raise the head; the arm could not be abducted. He was now placed upon a Lorenz bed, and the spine protected by Volkmann's corset. In September, the patient being still confined to the bed, there was a febrile attack, and he coughed up a bloody purulent sputum, getting up a spitting-cupful every day for a week. Gradually the expectoration became muco-purulent. Prognosis, bad.

The patient, notwithstanding, improved, and in a corset his existence was tolerable. In April, improvement having taken place, the corset was removed; the neck was thickened, the muscles stiff and of bony hardness, the vertebræ could not be felt. The head could be moved, and this was only further prevented by the thickening of the neck. Pressure over the spinous process was no longer painful. After a stay in Teplitz there was vascular neurosis. The superficial veins of the chest were greatly distended, especially on the left side, the nails were cyanotic, the hands cold, urine free from albumin and sugar. Weight, 102 lbs. The cyanosis became worse on movement. Two fingers on the left hand were completely anemic, the hand dark blue, and neuralgia in the arms.

In spite of all sorts of anti-neuralgics, iodid in enormous quantities, the condition remained the same up to 1896. Then pains came on in the body, resistance was felt in the right hypochondrium, painful redness and swelling in the right thigh, this disappeared with rest. The gluteal abscess discharged a few drops of pus in 1896, the swelling and hardness disappeared completely, and up to June, 1896, the condition was fairly good. Then fresh symptoms appeared, pains on walking, the legs were raised with difficulty. He could only walk when supported. Coarse sensation was retained, but fine were diminished, thermal sense was retained, distinct foot clonus. The spinous process of the fifth dorsal vertebra prominent. These symptoms then disappeared completely, when neuralgias came on in the fourth and fifth intercostal spaces. The symptom of passive myelitis disappeared so that the patient could walk about. Then inflammatory infiltration again appeared in the muscles of the thigh. The skin was reddened, but no fluctuation could be felt. Puncture gave no result, there was no rise of temperature. Rest and moist application brought about an apparent recovery.

Up to July, 1897, there were no new attacks. When the abscess in the thigh again became acute it was opened in eight days, when there was a copious discharge of pus. (There were cocci in the stained preparation.) Operation on July 28, 1897: The infiltrated subcutaneous tissue, as well as the biceps femoris, was cut through, and a greyish green colored cavity was reached, 15ctm. long by 18 wide. This was filled with iodoform gauze. Iodoform eczema supervening, by September 10 the wound was healed. At present the head was slightly inclined forward. The right supraclavicular region deeper than the left, here were hard swollen glands, the heart and lungs normal, liver and spleen not enlarged. In the abdomen on the right side was a resistance three finger-breadths in width, which was not continued upwards, and in which there was no fluctuation, and a similar one on the left.

As to diagnosis, the case did not correspond to any one known. Bacteriologic examination gave the first indication, as in all the experiments copious cultures of the staphylococcus albus were present. The case was, therefore, assumed to be one of staphylo-mycosis multiplex chronica. Such a case, especially without fever, had never been described. Kocher mentioned such an infective disease, but did not describe a case. The other cases had an acute course with high fever, and ended fatally, sometimes with cerebro-spinal meningitis. In those cases staphylococcus pyogenes aureus was always found. That the staphylococcus albus would cause such symptoms had been shown by Lexer's experiments on rabbits. Osteomyelitis of the vertebral column had only been produced experimentally and never observed in man. In the case related recovery had not yet taken place; resistance was still to be felt in the abdomen. The staphylococcus retained its power a very long time. Schnitzler had found the staphylococcus in a collection that had been enclosed thirty-five years in a case of osteomyelitis.

Selection of Food for the Sick.[11]

The selection of diet depends upon, *first*, the chemical composition of the food; *second*, its physical composition as contrasted with its chemical; *third*, the mode of preparation; *fourth* the experience both of physician and of patient.

Food is divided according to its composition into proteids, carbohydrates, hydrocarbons, and minerals, including water, and a certain proportion of these sets of elements is contained in every sort of food, animal and vegetable as well. Meats contain more proteids, vegetables more carbohydrates. The hydrocarbons are represented by the fats. The first tend particularly to tissue-making. On the other hand, the carbohydrates and hydrocarbons are force-producers.

The physical properties of food vary greatly.

11 James Tyson, *University Medical Magazine* Feb., 1898.

Vegetable foods are less digestible in that they leave more refuse matter,—an advantage or a disadvantage, according to conditions. Thus vegetable foods, for the reason that the large residue unabsorbed in the bowel, acts more or less as an irritant, become useful in constipation. On the other hand, in an irritation of the bowel, the conditions call for foods which have the least amount of waste, and are therefore bland and unirritating.

The mode of preparation of food has a great deal to do with its availability in sickness as well as in health. Very few foods are best taken raw. Of animal foods, the oyster is, perhaps, the only one. The nearer the oyster is to being raw, the more easily digested it is, since it contains at once a sugar and a diastasic ferment, the union of which is brought about by eating, and the oyster, thus, as it were, digests itself. If an oyster is cooked, this self-digestive power is lost. Of vegetables, except fruits, none are fit to be taken raw. Cooking is necessary to make them in any way digestible, particularly the starches, which are thus rendered vulnerable to the digestive diastasic ferments. Fruits, though there are many which may be eaten raw, also become more easily assimilated when cooked. This is true of peaches, pears, apples, berries and the like. The mode of preparation includes an infinite variety of methods of improving the flavor and digestibility of foods which belong to the province of the cook.

Experience, after all, is the most valuable practical criterion of the propriety of a food. The first direction to patients in regard to eating is: "Whatever does not agree with you, that do not eat." It is evident that this will eliminate at once a considerable loss of time in the selection of articles of food.

Experience, I am sorry to say, is often a good deal a matter of fancy. If one compares the dietary recommended by different physicians for a given condition, he will find surprising differences. Part may be matters of judgment and experience, but a good deal is the result of fancy. Dry toast is a positive poison to some persons, while to others it is an enjoyable and harmless food. Experience carries much further, but it is very difficult to get at the sum of the experiences of different persons. Some facts are, however, generally acknowledged,—for example, that liquid foods are alone allowable in fever; that carbonydrates are unsuitable in diabetes and proteids in gout. Not many diseases have their diet so definitely specialized as fever, gout, and diabetes. But in the matter of gout there is a wide difference of opinion by authorities. The French school, and it is followed by many in this country, forbids very positively the carbohydrates in the treatment of gout. Chemically, these are not contraindicated in gout, if uric acid is the *fons et origo mali* of this disease, since there is no nitrogen in the carbohydrates. I do not forbid sugars *per se*. If by fermentation they produce acids, this is a reason for not using them, since the acids thus generated go to neutralize the alkalies which otherwise keep the uric acid in solution. If sugars and vegetable acids act in the same way, they are also contraindicated.

In illustration of idiosyncrasy, of two cases of gout, one could drink a pint of lemonade with perfect comfort, and another could not touch lemonade without bringing on an attack. The reverse was true of strawberries. This goes to show, what is proven in many different ways in contact with disease, that the individual as much as the disease requires to be studied and treated.

Auto-Intoxication, with Report of a Case in an Infant of Fifteen Months.[12]

The author described the limitations within which this term should be applied, and spoke of the various methods by which the organism protects itself against the self-formed poisons, especially emphasizing the excretory function of the gastra-intestinal mucous membrane. He suggested the possibility of a selective excretory tendency on the part of the various emunctory organs, that is, the ability on the part of certain ones of them to dispose of poisonous substances which are incapable of being eliminated by any of the others. He endeavored to demonstrate the fact that ptomain poisoning cannot be classed among the auto-intoxications, and protested against the present promiscuous and unjustifiable use of the terms leukomain and ptomain poisoning. The case reported was a 15-months'-old infant, who, after having had an attack of what seemed to be acute gastro-enteritis, gradually developed a condition of depression eventually amounting almost to coma, which was accompanied by thirty-two hours' suppression of urine. The first urine voided after the recovery contained no albumin nor sugar, and had a specific gravity of 1012.

The Use of the Farinacea in the Diet of Later Infancy.[13]

The writer maintained that although the excessive use of the farinacea during early infancy was not generally recognized as injurious, it was not sufficiently understood that caution should be exercised in administering these articles after the twelfth month.

It is a common experience to see infants who have thriven during the first year, suffer continually from indigestion after that age.

This is due to the tendency of the mother and physician to put the child too early upon solid food. Bread, potatoes, strong porridges and undiluted milk are given, causing frequent digestive disturbances, and, if the practice is persisted in,

12 Dr. SAMUEL MCC. HAMILL before the Philadelphia Pediatric Society.
13 Dr. D. J. MILTON MILLER before the Philadelphia Pediatric Society

chronic gastric and intestinal indigestion. The most common cause, however, is the excessive use of the farinacea, or their administration in forms not readily assimilated. Under the mistaken idea that these substances are light and nutritious, they are given as the staple of diet to the exclusion of milk and the more nitrogenous foods.

The sanction of high authority is given to this practice, as will be seen by consulting most writers on infant hygiene, who recommend after the first year potatoes, bread, strong porridge, rice pudding and undiluted milk.

It should be remembered that the power of chewing is not fully developed in most children until well after the second year. The folly of giving bread is thus apparent, while in potatoes the starch granules are difficult of solution. Oatmeal porridge in excess, too, is liable to undergo fermentative changes in the intestinal cause. The result of a diet largely composed of these farinaces is often an intestinal catarrh, induced by the constant irritation of the mucous membrane from the fermentation which the carbohydrates are apt to undergo when imperfectly digested.

The diet in the vast majority of instances best suited to the child during the second year is a nitrogenous one, with a minimum of carbohydrates. Milk should be the staple, and this fluid should not be given undiluted until the eighteenth, twentieth or twenty-fourth month. The milk should be diluted with gruels or jelly, made by boiling crushed wheat, barley or oatmeal for many hours. To this may be added rare or raw scraped meat, as advised by Holt, after the eighteenth month, and at the twelfth and fifteenth month fruit juices, as orange juice or baked apple. Potatoes and bread are best omitted until the completion of the second year. The porridges may be given at twentieth month, the preparations of wheat and barley being selected in preference to the more starchy varieties. Difficulty in digesting the farinaceous foods may be met by the addition of a dry extract of malt, or diastasic essence or extract of pancreas to the gruels or porridges or the mixture of milk and gruel a few minutes before eating. This will often liquefy the food before the meal is finished.

The Treatment of Burns.[14]

The treatment of burned wounds as ordinarily carried out today by the general medical man is, the author believes, contrary to the accepted rules of good surgery. As a general thing, all classes of burns are treated alike; the exact pathologic condition not being taken into consideration. Dupuytren describes six varieties of burned wounds. They are classified as to degree more than to the structures involved. The usual classification is:

First degree: Where there is slight inflammation of hyperemia of the epidermis.

Second: Destruction of the epidermis and extending into and through the thickness of the integument.

Third: Those destroying the integument and extending into the cellular, adipose and muscular tissues.

These classifications vary in degree as to the structures involved and as to the extent of surface implicated. The gravity of the prognosis of burned wounds depends more on the extent of surface than to the depth, with the exception of burns about the head, chest and abdomen. Burns in these regions are generally accompanied by great shock, owing to the proximity of the great nerve centers; and burns about the abdomen are generally accompanied by profound shock, owing to the impression made on the solar plexus. It is the impression that a burned wound extending over one-third of the cutaneous surface generally proves fatal, even if only in the first degree, according to this classification.

If the patient is suffering great pain and excitement an anesthetic should be administred as soon as possible. The patient should be placed at rest at once. The anesthetic being administered, a hypodermatic of morphin given, and if suffering from profound shock, hypodermatic of strychnia, caffein or some heart tonic administered, the injured part, or the whole body if necessary, should be immersed in a bath, preferably cold water, excepting in cases of profound shock, where warm water should be used. While in the bath the burnt clothing can be removed, also dirt, and the patient in this way placed in a condition preparatory to treatment.

The treatment of burns of the first degree—according to this classification a hyperemia of the epidermis with or without destruction of the tissue—should be as follows: After clothing, dirt and everything have been removed, the parts should be washed with a 1 to 1,000 bichlorid solution, and this should be washed away with a 1 to 2,500 bichlorid solution. In this class of burns if there is no extensive destruction of tissue, an application of carbolic ointment can be made, and it is only in burns of the first degree of slight character that I would at all recommend the application of an ointment. Over this can be applied bichlorid or carbolized gauze, over this absorbent cotton and a bandage. It is often difficult to determine on first inspection the severity of a burned wound, for what may appear as mere hyperemia may in a short time develop into a serious case by the deeper structures being involved, though not evident on first inspection.

Burns of the second degree demand a more thorough procedure. After clothing has been removed, the anesthetic being administered, all blebs should be opened, all burnt tissue removed, and the wound made as aseptic as possible. This can be done by the application, first, of a 1 to

14 Dr. E. W. Lee, Omaha, Neb., in *Railway Surgeon.*

1,000 bichlorid solution and then washing this away with a 1 to 2,500 or 3,000 bichlorid solution. Treatment of a burn of this character is a surgical operation which should demand most sincere consideration. Hands, instruments, dressings and everything about the patient should be placed in so nearly as possible an aseptic condition. After the wound is cleaned and prepared in this manner, and after all blebs and necrotic tissue have been removed, strips of rubber tissue or lister protective about five inches long and two inches wide, should be placed over the wound, with small holes cut out to permit the discharge of whatever secretion may take place. Over this should be applied moist bichlorid gauze, next absorbent cotton, then protective, and over all a snug bandage.

Burns of the third degree are treated on the same principle, and in cases involving the extremities of such severity that amputation is considered necessary, an amputation is never advisable until a line of demarcation is positively formed.

The special points to which I wish to call attention are, first, to relieve the patient of pain and shock; second, to place the injured parts so nearly as possible in an aseptic condition; then the application of an aseptic dressing, which will place the wound in the best condition for prompt and painless recovery.

The pain in these classes of wounds can be greatly relieved by the application of the rubber tissue or lister protective next to the burned surface. The pain is often largely due to the irritating effect of a dry dressing rubbing against the exposed and irritated surface. The rubber tissue does not stick, and the small holes made in the tissue permit the escape of any secretion which may form. This dressing is easily removed and granulation rapidly promoted, in this way placing the wound in a condition for the application of grafts, if deemed necessary.

The opening of blebs and the removal of the necrotic tissue is at variance with the opinions of some good authorities, but I believe that all blebs should be opened, the contents allowed to escape and the wall cut away. This procedure places the wound in a more aseptic condition, as the blebs are very often ruptured, either by the pressure of the dressing or by muscular action, and suppuration is much more likely to follow. Also it has been determined that death after burned wounds is often caused by toxic ptomains. The ptomain of burnt organs is the same when the organ is first removed from the body and then burnt. Healthy animals inoculated with this toxic product die with the same symptoms as if they had suffered from a burn; death after burning is therefore due to the absorption of ptomain product by chemical changes in the tissue due to burn. Therefore the removal of the burnt part prevents this absorption and consequently all specific symptoms of the burn.

The immersion of the burnt portion or the whole body is a great factor, not only in the matter of cleanliness and putting the wound in an aseptic condition, but greatly aids in relieving pain and preventing shock. I have treated burned wounds in this manner for several years, and results have fully paid for the time, care and attention necessary in carrying out this line of treatment. It is a very easy matter to prescribe an ointment, carron oil or some such application, and to direct the patient to use it, but it is not doing justice to the patient nor to yourself. Burnt wounds will often go on to almost complete recovery without the necessity of redressing, as I have treated extensive burns in this manner and have not found it necessary to remove the dressing for a week or ten days; then find a clean, healthy, granulating surface on which grafts or Thiersch's flaps could be applied.

Wanted to Be Called.

The Park Avenue trolley line in the city of Rochester is crossed by three consecutive streets which bear masculine surnames. An Irishman with a carpet-bag entered one of the cars the other day, and sat down gingerly near the door. Four or five other men completed the list of passengers. The car swung around the corner of Chestnut street.

"James," shouted the conductor. A man signalled him, the car stopped and the man alighted. A half-minute afterward the car neared another cross street.

"William," announced the conductor. Another man got out. The Irishman's eyes grew visibly larger.

"Alexander," shouted the conductor. The third man left the car.

When it had started on the Irishman arose, and approached the conductor.

"Oi want to git out at Avnoo B," he said. "Me foorsht name is Michael."—*Youth's Companion.*

Stupid Children.

What the school-teacher calls stupidity is often a condition of dulness resulting from disease. If such children are carefully examined it will be found that quite a large number of them are suffering from defects of eyesight, from deafness or from some obstructive disease of the nasal passages, of which adenoids is perhaps the most common, resulting in making them what is known as mouth-breathers. Moreover, certain children classed as stupid possess decided talents in certain directions which the school instruction is not well calculated to develop.—*Journal of Medicine and Science.*

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THE PROFESSION TODAY—ITS TROUBLES AND ITS NEEDS.

A day of fads and faddists, a time of sects and schisms, of unequaled scientific advancement and of unexampled inadequacy of reward, such is the era upon which the medical profession has stumbled in this year of grace, 1898. Side by side with the development of the germ theory of disease, affording ultimate determination of much that has been baffling in etiology, with improved methods of diagnosis, with antitoxins and serums galore, comes the hey-dey of 'paths and 'pathies, of medical "system of cure," of dispensaries overcrowded with the well-to-do, of a profession, handicapped by the very honesty and purity of its representative members, involved in a struggle for mere existence with self-seekers, charlatans and others of that ilk whose greatest ambition is the accumulation of a fortune, and whose highest ideal the confining of the means to this end within limits unassailable by the criminal law.

It is a somewhat remarkable fact that times of unusual advance in the sciences embraced under the general head of medicine have always been attended by a marked awakening of the fetichistic side of human belief, a reversion to the methods existent when medicine and religion were so interwoven that each in turn seemed but an excrescence upon the other according to the prominence of diseased conditions of mind or body. It is with keen humiliation that one is compelled to confess that the day of the "medicine man" is not yet over, that "healers," faith-curists, osteopaths and the like, flourish with us despite our boasted civilization, in kind if not in degree akin to the charlatanry practised by the "witch-doctor" upon the benighted heathen in "darkest Africa." One cannot pick up a daily paper without being stared in the face by the presentment of some "eminent scientist" who has discovered a universal panacea, pictured, smug visaged and bland, in the act of peering down the tube of a microscope (probably in search of his conscience) or else with bulging brow and determined mien assuring the public that "no punishment is too severe for the person who dares to deceive the sick," implying as a corollary that truth dwells alone in the particular make of sugar pellets dispensed by himself.

We read of osteopaths who, having by some accident discovered that the human body is constructed upon a frame-work of bones, claim that all diseases must be due to displacements, and who are besieging the legislatures of various States for permission to practice their "science" upon a gullible public. Such bills have already been passed in three States, but were fortunately vetoed by the governors, and another is now pending in New York. In Massachusetts the Christian scientists and faith curists are making a strong fight against the passage of the medical registration bill, and in all of these cases the clergy come to the fore as endorsers of the various nostrums and systems.

Even the cooking school has its apostles who decry the profession, promulgate a pseudo-science gained in a cursory examination of school physiologies, and advocate divers and sundry startling theories, such, for instance, as life upon one meal a day, unlimited ingestion of rare meats, the abolition of the potato, and state that "Nature is the infallible guide to the needs of the system and what is craved should always be given," heedless of unrestricted diets of slate pencils, etc., for chlorotic girls, and of any knowledge as to the proper proportions of nitrogen and carbon in diet in order to preserve that stability of the nervous system upon which sanity depends.

All and sundry strut upon the stage of life,

each with his or her own special little axe to grind, and all in pursuit of the "almighty dollar." All deal with the great problems of life with much of the calm assurance brought to bear upon science, literature and art by the average Chautauqua graduate, possessed of the "little knowledge" which is so dangerous a thing.

Then we have the professorial candidates for public favor, who thrust themselves upon greatness in ways similar to those used by of the Chatham street tout, standing for themselves instead of for the profession, pauperizing the public in order to swell their clinics, often buying the very titles by which they flourish.

These are the conditions that exist. From the ranks of the profession, the men who suffer chiefly because of the burdens of a too extensive charity, the inroads of charlatanry, the fetich worship of an uninstructed laity, and the secret practices of those driven into criminal ways by the necessity to live, comes a continuous, increasing cry for reform. Where lies the remedy?

It must be conceded that the cause of the existent state lies chiefly in the profession itself. If there was but one-half the co-operative spirit among medical men that there is in any other calling such abuses could not exist, far less gain ground. Were all banded firmly together, the profession could impose its own terms on the public. If the *entente cordiale* was cultivated instead of a spirit of individualism, there would be no need of talk of legal recourse, no necessity for despair. The first and chief reform must come from within. Raise the standard of the profession, make no concessions to unscientific speculators, impress upon the public the fact that science can give them more than quackery, stand shoulder to shoulder on all matters for professional good, and such perplexities will be solved as quickly as they materialize, did they materialize at all.

Puzzled Doctors.

This is a frequent heading seen in the newspapers, after which there is a telling of something of the simplest nature, which any first-course medical student should be able to diagnosticate off-hand, or of a condition about as improbable and impossible as the laying of connection tracks on a line of railway between the earth and moon. Such reading is filling, to say the least. It bulges the revenues of the space-writer and makes a corner on Providence. To be sure, the doctor in attendance was puzzled.—*Cincinnati Lancet-Clinic.*

Abstract.

PRACTICAL RESULTS IN THE DIAGNOSIS OF CONTINUED FEVERS FROM EXAMINATION OF THE BLOOD.*

At the last meeting of this society, I led a discussion concerning the existence in North Carolina of a third form of continued fever other than typhoid or malarial. My tentative opinion there expressed was that the largest number of the obscure cases were probably mild types of typhoid, while I insisted strongly on the necessity for blood examinations in the settlement of the question. I have not seen fit to change my views on the subject, but rather to have them strengthened by continued observation. In the light of further experience I may assert that I do not believe that there exists in North Carolina a third form of continued fever, but that all our febrile conditions, which are of sufficient length to be called "continued," are either typhoidal or malarial in origin.

Of the doubtful border-line cases, many are atypical typhoid fever; some are cases of malaria in which no blood examination has been made.

Turning aside from this question for the moment and leaving it open for further investigation, I wish to record, as bearing somewhat upon the matter, the results of examination of the blood in over thirty cases of continued fever observed since my preliminary paper was read over a year ago. In the examination which forms the basis of the statements contained in this report, every one of the cases which gave a negative result as to the plasmodium proved in the end to be typhoid fever. Those which showed the parasite were found to correspond clinically to malaria and were cured by quinin.

The method used in examining the blood is very simple. The necessary apparatus is carried with me in a small hand-case, containing several glass slides and cover-slips, a wad of absorbent cotton and a stoppered tube of alcohol. A small pair of dressing forceps and a bistoury are always in my pocket case. The blood is drawn preferably from the lobe of the patient's ear. After washing well with alcohol the point to be punctured and allowing it to dry in the air, a slide and cover-slip are prepared in the same manner and then rubbed very vigorously for a few minutes with a clean linen handkerchief, being careful not to touch their flat surfaces with the fingers afterward. The skin is then pricked with the point of the bistoury and the blood allowed to ooze out, squeezing the part being avoided. The first drop is wiped off with the linen and, as another drop accumulates, it is caught on the glass cover which is held by the forceps immediately in con-

*H. A. Royster, A. B., M. D., *Transactions, North Carolina Medical Society.*

tact with the blood, not the patient's skin. The slip is then inverted and allowed to fall upon the glass slide without pressure, so that the film of blood spreads out smoothly and evenly. It is then ready for examination and will remain fresh for an hour. For the most satisfactory work a one-twelfth-inch oil immersion lens is needed, though lower powers can be used.

I have had no experience with staining methods in the study of the plasmodium. All my work has been done with fresh specimens taken from patients in both hospitals and private practice, some of whom were scattered widely apart. There has been no attempt on my part to go into an exhaustive study of the malarial parasite. My energies have been bent chiefly toward putting into practice a method by which we may in the very beginning of continued fevers either determine the existence of malaria beyond a doubt or exclude it from the diagnosis altogether.

As soon as I am called to a patient with fever, after taking the history, I invariably examine the blood before giving my opinion. If I do not find the plasmodium, I re-examine the second and, possibly, the third time and, failing then to discover it, I conclude that the patient has not malaria, taking into account every symptom in minutest detail. This is a sufficient contra-indication to the administration of quinin and, according to my views already expressed, is evidence that the patient has typhoid fever. The presence of the plasmodium, of course, means malaria, relying again on the clinical history so far as it goes, Widal's serum test for typhoid, when it comes into more general use, is likely to simplify this whole question. In this report, the diagnosis made by blood examinations gave positive indications for treatment which were successfully carried out in each instance.

It is not deemed necessary to read before you full records of all cases. Only three have been selected, as illustrating distinct types in which examination of the blood is essential to accurate diagnosis.

I. William H., age 10 (?) years visiting in Raleigh last summer from a town in eastern North Carolina. His fever came suddenly, with a chill, the temperature rising rapidly to 105°F. and over. There were no prodromal symptoms of typhoid. Three examinations of the blood failed to show the plasmodium. Sponge baths were given and eliminative treatment for enteric fever begun. In a few days the temperature was pursuing a steady course and delirium,, diarrhea and rose spots developed. The little patient, under the care of another physician, went through a typical attack of typhoid fever and recovered.

II. M. C., girl 8 years of age, native of Wake county, had symptoms suggestive of neither typhoid nor malaria, but was brought to me by her mother, who said that her daughter was "run down" and had been for two months. They had just returned from a visit to the country. The child's temperature was found to be 101°; skin pale; no special symptoms. Blood showed malarial parasites. Patient was cured by two grains of quinin every four hours, followed by arsenic. This case is one of many in which sub-acute or chronic malarial infection is, no doubt, responsible for conditions of so-called nervous prostration, etc.

III. This case was one which began rather like typhoid, though the patient, Miss M. B., a young lady of 18 years, was a resident of one of our eastern counties, and was in Raleigh only for a short time. The attack came on gradually, with aching in the limbs, headache and nose-bleed; followed in four or five days by slight chilliness and fever which ran up to 103° and 104°F. Five grains of quinin sulphate every four hours, plenty of water to drink and sponge baths to insure patient's comfort. Recovery. Duration of fever, five days after treatment was begun.

In conclusion, I desire to emphasize my belief in the following statements:

1. Our continued fevers are either typhoid or malarial.

2. The first step in their diagnosis is the finding or excluding of the malarial parasite.

3. This can be done readily and satisfactorily in the manner indicated.

In discussion, Dr. O'Hagan regarded Dr. Royster's paper as very valuable, inasmuch as it has shown almost invariable tests for arriving at a correct diagnosis of fevers which are very often obscure. I have long since come to the conclusion that there are but two fevers, malarial and typhoid. This mongrel type, which was named by Dr. Woodward typhoid-malarial fever, I have failed to notice in any way whatever. Dr. Royster has given the technic of making differential diagnosis absolutely certain, saving time and enabling in the initiation of proper treatment for the special fever. As long ago as I can remember having a case of this fever when I gave quinin for four days and the fever did not subside, I at once determined the case to be typhoid fever. Some of the symptoms are frequently absent; epistaxis is absent, tympanitis is absent; there are no means to verify it except a post mortem examination, which is unpleasant and unsatisfactory.

Dr. Duffy, like other persons who have had much experience with fevers, was on the anxious bench to know whether it was the one or the other. He could hardly subscribe to the doctrine that we could rely on quinin as a test even after thoroughly cinchonizing our patients, not only as a matter of therapeutics, but as a diagnostic test. He reported a case which began with a high fever, no prodromes, except some few weeks before had some symptoms of acute articular rheumatism, which only helped to obscure the diagnosis, and make him more in doubt. The fever was constant and high. Her mother said she had been better and eating more just before

the attack of fever than she had in a long time. Yet she was taken suddenly with a high temperature, which nothing would keep down long. There was no step-ladder coming up of the fever continues regarding it as non-malarial. He never any eruption at all characteristic. After that had gone on about a week, because quinin had no effect on it, a careful examination of the lungs showed no lesion, and no special symptoms of anything else. It was diagnosed as typhoid fever. It was only a few days before the patient had violent and copious hemorrhage from the bowels and died. If all such cases could be subjected to the microscope for examination, and a diagnosis of typhoid fever positively made, and the patient not subjected for several days to profound cinchonism, which seems to be harmful, a great stride would be made. In reference to the exclusion of malarial fever by the quinin method, cinchonizing the patient, and if the fever continues regarding it as non-malarial, he had charge of the Marine Hospital Service, at Newbern and had patients from off the rivers, occasionally a man who comes looking pale and the picture of malarial infection. He has a big spleen, he has had numerous chills, not only last fall, but he has had chills year in and year out. The kidney secretions turn dark brown, almost black with heat and nitric acid. He had had these men in the hospital where he could watch them every day, and would send them out and they would come back with a little fever. He watched them until the hospital sixty days were out, and in one instance had a man transferred to the Wilmington hospital and had him to come back from there with still a little fever. He had taken quinin and Warburg's tincture, which is a strong solution of quinin with other things, iron, and almost everything else that would be likely to be of service to him, still he had fever. Hence he was skeptical of the diagnosis of malarial fever with quinin.

NEPHRECTOMY AND ITS RELATION TO PREGNANCY.*

During the last fifteen years, the energies of surgeons all over the world have been directed extensively to the disorders of the kidney. As a result, the removal of a diseased organ has more and more frequently been resorted to with success in a very large proportion of the cases. Such a result has necessarily permitted a fairly considerable number of the population to continue their existence under vastly improved conditions, and amongst these, women have formed a large percentage. To a number of such, when restored to health, the question, whether they are justified in marrying, or, if married, in bearing children, must have presented itself. I do not propose to enter into the question of how far the loss of one kidney affects all individuals subjected to the operation, but I purpose rather to see how far that loss may be expected to influence the after-life of such small proportion of women as may become pregnant.

At present I know of no data which may lead one to judge how far such a loss may affect the question of length of life—taking all individuals so operated upon from an insurance standpoint. It is, however, possible to judge to some extent of the dangers to be run by a woman, who has had to undergo nephrectomy, should she afterwards become pregnant. Particulars of six pregnancies at full term in women under these circumstances are on record, and I wish to note particulars of three more such pregnancies, as well as of one case of nephrectomy during pregnancy. From these, it is possible to draw some deductions as to what risks are run by the mother, so far as her own health is concerned, during the period of pregnancy and afterwards, and also whether the development of the child is in any way affected.

The cases on record are those of Schramm[1]—one confinement; pregnancy occurred 2¾ years after operation; Fritsch[2]—one confinement; no particulars given; Israel[3]—one confinement; the operation having been performed on a primipara when the woman was four months pregnant; Tridondani[4]; three pregnancies in the same woman; first confinement thirteen months after operation. In my three cases one woman has had one pregnancy, another has had two pregnancies, whilst in the third the operation was performed while the woman was in the third month of pregnancy.

CASE I.—*Calculous Pyelitis: Nephrotomy followed by Nephrectomy. Pregnancy seven months later.*—Mrs. F., aged 32, multipara, came into hospital in July, 1893, suffering from pain and swelling in the right loin. She had had vomiting in the morning for some months, and also night sweats. Menstruation had ceased for eleven months. When examined, a tense fluctuating tumor was felt, occupying the upper half of the right side of the abdomen. Dulness on percussion was continuous with that of the liver, and palpation was painful. The woman stated that she had passed gravel at times. The urine was acid, with a thick deposit of pus. The other organs were healthy.

August 2, 1893, the abscess was opened in the loin by an incision parallel to the rib. The kidney consisted of a series of cysts full of pus, from which a large stone and also a smaller one were removed, and the whole wound was thoroughly syringed out and a large tube put in. She recovered rapidly.

September 6, the ureter was catheterised to see if there was another stone present. The urine then was, sp. gr. 1014, acid, no albumin, all pus coming by the wound. She went home for six

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weeks, but was readmitted on October 30, stating, that while at home pain had been constant, and that micturition had been unduly frequent, with, on one occasion, blood, and that there was a marked increase in the sediment. The pain had been much more acute whenever she passed large quantities of pus, but no gravel or portions of stone were found. Temperature 103.2°, pulse 92, urine, sp. gr. 1010, alkaline, containing albumin and pus. The kidney was removed through the old incision on November 1, 1893. In separating the kidney from the peritoneum, to which it was very adherent, the latter was torn for about two inches. After removal of the organ this was sewn up and healed perfectly. She made an excellent recovery, except for a sinus in the loin. On the Easter Monday following she fell into the sea, and on reaching home, found the ligature from the stump protruding from the orifice of the sinus, which closed within a fortnight.

This patient became pregnant in May, 1894, seven months after the operation. She suffered no more than she had done in her three previous pregnancies, except that the morning sickness was more severe, and that she felt very exhausted at times. The urine, when examined on September 6, 1894, at the completion of four months' pregnancy, was neutral, sp. gr. 1012, faint trace of albumin, no sugar, with a deposit of mucus but no pus, urea 0.8 per cent. Examined again in December, at the completion of seven months, it was neutral, sp. gr. 1010, a trace of albumin, urea 1.1 per cent. Labor came on in February, 1895, the pains were exceedingly strong, and under her expulsive efforts the cicatrix yielded, and there was a large projection outwards of the abdominal contents. In order to prevent a ventral hernia, chloroform was given, and she was delivered by forceps as soon as possible. She is now perfectly well, with a healthy child. Though there was a large quantity of liquor amnii, it could hardly be called excessive.

CASE II.—*Periureteritis: Pyonephrosis: Nephrectomy: Two Pregnancies.*—Mrs. K., aged 39, married fifteen years, mother of six children, all natural labors. Cystitis first occurred when the third child was four months old; and again, seven months after the birth of the fourth child, when she "caught cold in the bladder." Retroversion of the uterus occurred at this time, followed by a miscarriage and further bladder symptoms, such as incontinence; at the same time she noted that her eyesight was bad. After three months' treatment, the bladder was explored under chloroform, with no relief. In 1890 she complained of severe cutting pain, referred to the left ovarian region, incontinence of urine, straining and smarting during micturition, with pain in the left lumbar region. Some pus was found in the urine, which was acid. A calculus in the ureter was suspected.

An exploratory laparotomy was performed December 26, 1890, by Drs. Collingwood and McCormick. The kidneys were normal to palpation, as also the uterus and appendages. At the lower end of the left ureter, within three-quarters of an inch of the bladder, there existed a thickening from one-half to three-quarters of an inch long, involving the wall of the ureter, but as no calculus could be felt, the ureter was not opened. Some amelioration of symptoms followed until July, 1892, when pus in large quantities was noticed intermittently in the urine, and the left kidney was found by palpation to be much enlarged. The patient was admitted into the hospital, and on September 21, 1892, I removed the left kidney. It is a point of interest that a uterine sound was passed from the bladder up to the kidney, the ureter being of the caliber of at least the femoral artery.

Mrs. K. became pregnant in November, 1893, fourteen months after the operation, quickened February 6, 1894, and was confined in August. Urea tests taken during the pregnancy, and subsequently, gave the following figures:

February 7	3d month.	Urea	1.40 per cent.
March 21	4th "	"	1.20 "
April 10	5th "	"	1.15 "
May 12	6th "	"	0.70 "
June 28	7th "	"	0.55 "
July 7	8th "	"	0.70 "
August 16	9th "	"	1.20 "
" 24	Confinement.		
October 14		"	2.20 "
December 10		"	1.60 "

A decrease in the percentage to the seventh month, with a rise to the normal after the confinement.

She again became pregnant in June, 1895, and was confined in March, 1896. On both occasions the labor was normal, and the amount of liquor amnii was not excessive. She nursed both children, and they are the healthiest she has had.

CASE III.—*Pyonephrosis: Nephrectomy while Pregnant: Abortion: Uræmia.*—In this case, a rather delicate lady, aged 32, mother of four children, had never had any illness previous to her marriage in 1881, except that a horse fell and rolled on her when she was fourteen years old, with apparently no ill effects. She miscarried three months after marriage, and pain in the left side began directly after. The attack was very severe, and persisted for weeks. She was taken to Melbourne for consultation, but got no relief, and was brought home in a moribund condition. After a very strong sleeping draught, a large quantity of water passed, and she was relieved, but had attacks of pain every fourteen days for twelve months. Pain ceased after she quickened with the first child, born in April, 1883, but returned three days after confinement; and she then passed a quantity of what she described as "dirty brown water like nasty tea, with a curious white sediment." A large firm tumor was detected in the left hypogastric region, close to the umbili-

cus. She recovered from this, and was free from attacks for some years. In 1890-91 commencing myxedema was suspected, but passed off under liq. arsen. hydrochlor. She bore children in 1892 and 1893.

In 1893-94 the attacks returned, and in September, 1894, she passed urine thick with pus. The swelling in the loin was of the shape of a kidney, but twice its size. Another attack followed a fortnight later, and the enlarged kidney was distinctly recognized before the discharge of the pus. An extremely severe attack followed in November, the tumor increasing perceptibly daily, till it was as large as a child's head, only 12 to 20 ozs. of urine being passed per diem. She was then in the third month of pregnancy.

No nourishment could be retained, nor could she sleep; having to be propped forward in bed in the position described by Dr. Newman.[5]

Nothing gave relief. When seen in consultation it was decided that, owing to her weakened condition, immediate interference was necessary.

This was done on December 4, 1894, by the loin incision, and the kidney was found to consist of a huge cyst by the side of the spine, containing a quart of dirty brown purulent offensive fluid. The sac formed by the pelvis of the kidney extended down by the side of the ureter for from 2 to 3 inches—the kidney itself consisting of a series of cysts. The question whether such a kidney could be of any further service, the risks attendant on leaving in a weakly woman a foul mass which could not be properly drained, the certainty of a permanent fistula, and its eventful necessary removal, were considered. It was decided to remove it at once, which was accordingly done. No calculus was found. The wound was completely healed on the seventeeth day. The urine gave a result of 6 ozs. on the first day, and an average of 38 ozs. per day for the next fortnight. On examining the organ after removal, it was noticed that the ureter ran in the wall of the pelvis of the kidney, in a manner similar to that in which it enters the bladder; and consequently, the greater the tension in the cyst the more firmly the ureter was closed.

It was an exact instance of the condition described by Simon, of the alteration in the relationship of the kidney and its duct, quoted by Dr. Newman.[6]

It was quite expected that the interference with the kidney would have brought on a miscarriage, as the patient had already miscarried on three occasions, and had had severe pain in the pelvis, before the operation. However, this did not occur, and hence another serious difficulty arose—should the pregnancy be allowed to go on? At that time no cases had been published, and as there was no need for her to run any extra risk in order to have a child (she had four living), a miscarriage was brought on, and the ovum came away on December 31, 1894. This patient had a mild uremic attack, with semi-consciousness for some hours, and albuminuria when in New Zealand recruiting, within two months of the operation, led up to by a very rough passage across from Sydney. She was sent home at once, and on her arrival had only a trace of albumin. The husband, writing fifteen months later, stated she had not required medical attendance since I left, in June, 1895.

Each of the three cases has a point of interest. In the first, a ventral hernia was only prevented by rapid delivery. The second discloses an interesting pathologic history. An inflammatory periureteritis, possibly originating from some pressure or injury during confinement (the marked symptoms began four months after the third child was born), was recognized at the lower end of the ureter by an exploratory laparotomy, and examined. The kidney on the affected side and other organs were found to be healthy. That this periureteritis continued upwards was proved by the state of the ureter at the time of the operation, and it eventually led to the disorganization of the kidney previously recognized as healthy. It may have been tuberculous in nature (though there was then no other evidence of that) for I have heard lately, that since her last confinement in March, 1896, she has had further bladder trouble, with an ulcer on the posterior wall thought to be tuberculous, which was scraped, with relief of all her symptoms. At the same time it must be remembered that Harry Fenwick[7] states that solitary ulcers of the bladder are rarely tuberculous.

In the third case, the combination of pregnancy with pyonephrosis was sufficiently serious, but when complete obstruction to the discharge of the pus occurred, it added considerably to its gravity. The removal of the kidney at the time I believe to have been the better course, although the immediate shock was greater. As to the miscarriage the after-history of the case seemed to justify the course then taken. The risk of throwing the function of depurating the blood of a mother and her child, at a stage at which the latter was beginning to develop rapidly, on a single kidney, which had not had time to hypertrophy, is very considerable. That the remaining kidney was scarcely able to meet the requirements of the mother's system alone is shown by the uremic attack from which she suffered, when the action of the skin was interfered with during the stormy passage to New Zealand. Had the pregnancy been allowed to continue, eclampsia or uremic coma would have supervened, and the fetus would have been lost at a later period in all probability.

Tridondani[8] when discussing the effects of the loss of one kidney, admittedly greater in a pregnant woman, does not accept the belief that there is sufficient compensating power in the other kidney simply by hypertrophy to deal with the excrementitious materials of the body. He states that the elimination through it is greater of retro-

grade tissues, and especially of urea. If, on the other hand, the work of elimination is more active at other times than in pregnancy, on the other, this creates conditions by which the renal activity can be more or less interfered with.

The nutrition of the glomeruli is affected by the venous stasis in the kidneys and the irritation caused by an excessive amount of urea, and a nephritis results, followed by the albuminuria of pregnancy; and Tridondani quotes Murri as supporting Heidenhain that albuminuria depends on slowing of the blood current in the kidneys. Such stasis Tridondani believes is induced (1) by the pressure of the enlarged uterus on the renal veins; (2) by the engorgement of the abdominal vessels which follows on the emptying of the uterus, and (3) by the fact that the uterine arteries, arising so close to the renal, take off a large proportion of blood from the kidneys during pregnancy. He believes that such stasis is prevented by an increased *vis a tergo* by hypertrophy of the leftventricle of the heart, and that by that the dangers of pregnancy are avoided, and, if the heart be sound, women may expect to get through a confinement without undue risk.

If his contention be right, that such a venous stasis in the kidney occurs during the pregnancy by pressure from the uterus, it is evident that pressure cannot occur before the seventh month, or the sixth, at the earliest, from the anatomical position of the vein. Further, if the uterus presses on the renal vein, it presses surely more on the vena cava and iliac veins, and should cause a similar stasis below the point of pressure, but edema of the legs is specially remarked as being absent in several of the cases, and not mentioned in the others. As to the engorgement after confinement, it is to be noted that the albuminuria of pregnancy usually disappears in the first week or so after the emptying of the uterus.

Again, if hypertrophy of the heart be the means of safety for a pregnant woman, one would expect to find a hypertrophy, possibly not as great, but present in all cases in whom only one kidney remains. That hypertrophy of the heart takes place in all pregnant women, to a certain extent, is now generally accepted; but such hypertrophy does not free them from eclampsia or uremia, although they possess two kidneys.

That hypertrophy of the sound kidney occurs in cases of disease unoperated on, has been proved by necropsy, but I have seen no post mortem record of any case some months after nephrectomy. But by experiments on animals, Bradford[9] showed that if two-thirds of the total kidney substance remained, the animals were not affected, and that he could not be sure of cardiac hypertrophy even after six months, though in dogs it was difficult to decide.

My own view as to wherein the safety of women under these conditions lies, is that the answer is to be found in an increased action of all the emunctories of the body and not in hypertrophy of the remaining kidney or heart only. I fully allow that these conditions are large factors in the question, but have we not been too long under the impression that eclampsia depends solely on the work done by the kidneys? Dr. Clifford Albutt[10] and Mr. Simpson[11] have brought forward the question of the possibility of a serum toxin in pregnancy and its elimination by the liver and bowels. The toxin acts as an irritant to the kidneys leading to albuminuria, which thus becomes the symptom of the depth of the intoxication of the system, and not the real cause of the eclampsia. They point out that eclampsia is more common in primiparæ as they have not become inured to the poison, but in subsequent pregnancies the same women usually escape, owing to their inoculation in their first pregnancy. I believe that the skin, bowels and lungs all do an extra amount of work. That the skin does so, is shown by the effect of the chill on my patient No. 3, who developed a mild attack of uremia consequent on diminished action of the skin, caused by the cold, wet passage from a warm to a cooler climate. There is

PERCENTAGE OF UREA IN NORMAL PREGNANCY AND AFTER NEPHRECTOMY.

In Normal Pregnancy (Liscia and Passigli).				After Nephrectomy.		
No. of Cases.	Months of Pregnancy.	Average per cent. of Urea.	Lowest per cent. of Urea.	No. of Cases	Average per cent. of Urea.	Lowest per cent. of Urea.
3	3	1.30	1.080	1	1.40	—
2	4	1.23	0.910	2	1.00	0.80
1	5	1.42	—	1	1.15	—
1	6	2.00	—	1	0.70	—
—	7	—	—	2	0.82	0.55
22	8	1.51	0.522	1	0.70	—
8	9	1.73	1.200	1	1.20	—
				2 months after confinement 2.2.		
				4 months after confinement 1.6.		

also a very interesting case reported by Mr. Bartlett,[12] in which uremia came on four days after nephrectomy, and was relieved by profuse action of the skin. This increased action of the other emunctories is also, I believe, further shown by the analysis of the excretion of urea.

Winckel[13] states that in normal pregnancy the secretion of urine is increased from 1,500 c.cm. to 1.750c.cm., while the daily excretion of urea (28 g.=432 gr.) is as great as in the non-pregnant state. The urine, for this reason, is lower in sp. gr. and simply shows an increased excretion of water. Many other authors practically agree with this, but Drs. Liscia and Passigli[14] have made a careful examination of this point. From thirty-seven observations they came to the conclusion that the quantity and density agree with the figures for normal urine. Urea is diminished, chlorides remain normal, acids (sul-

phuric and phosphoric) are slightly diminished, kreatinin slightly increased. A comparison of the percentage of urea from their normal cases with mine after a nephrectomy (if one may judge from so small a number) seems to point to the excretion of urea by the kidney under these circumstances as being less than normal.

This comparison shows, so far as it goes, that the percentage in my cases only equals the lowest percentage in their normal pregnancies, instead of a higher one as was expected. Should this prove correct upon further examination, the balance of urea must be got rid of by other organs. Analyzing all these cases it will be found that:

1. All the women made good recoveries who went to term, although Schramm notes a long recovery.
2. Slight albuminuria was noticed in Schramm's case and in No. 1 of mine.
3. A tendency to ventral hernia in one case.
4. Liquor amnii was not excessive in any case.
5. Marked edema is not noticed in any case.
6. Schramm notes an irregularity of the pulse shortly after the confinement, although hypertrophy of the left ventricle was present.
7. Morning vomiting was severe, but not dangerous, in one case.
8. The forceps were used in one case only, and then merely to prevent ventral hernia.
9. Eclampsia, or uremia, did not occur in any case that went to full term, but did in my case No. 3 shortly after the miscarriage.
10. All the children were healthy, and in Tridondani's and my case No. 2 it is specially remarked that they were the healthiest the woman bore.
11. In all the cases the mothers nursed their children.

Hence I think we may fairly conclude that women can, after a nephrectomy, bear children without very great danger to themselves, provided their organs and the remaining kidney are healthy.

I may add that I have heard of another case in which mother and child did well, but I have not been able to obtain particulars as yet. The cases show that seven women have undergone the ordeal, and that ten healthy children have been born at term.

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INFANT FEEDING.*

The natural food of an infant is of course the mother's milk and all healthy mothers should feed their infants from the breast. A healthy mother who for the sake of the contour of her chest, or because of the necessary enforced abstention from gaiety passes her offspring to the care of strangers for its nourishment, ought to be severely censured. Moreover, nourishing is beneficial to the mother; it stimulates her uterus and is a great preventive of future harm to that organ.

But just as it is so desirable that a healthy mother should nurse her offspring so it is most undesirable that a mother suffering from serious organic disease should attempt to perform that function. I would here mention phthisis and any tuberculous affection of the mammary glands as a contra-indication to nursing. Those in whom there is a strong family history of insanity would better not nurse their children—at any rate, nursing should not be carried to such an extent as to undermine the general health. The fact must never be lost sight of that the mind has a great influence for good and evil on the body of the mother and so on the production of milk. Emotional disturbances of all kinds are most harmful and may make the milk actually poisonous to the infant. The child should be placed to the breast as soon as the mother has recovered from the fatigue of the labor, say in three or four hours after her confinement. If there is no milk at first wait for a few hours until it is secreted, placing the child at the breast every three hours. Do not give gruel; a little sugar-water may be given if necessary from time to time. As soon as the milk is secreted apply the child alternately to each breast, even though a preference is shown for one only. The child, during the first week, should be suckled every two hours between the hours of 5 a. m. and 11 p. m., and only at fixed intervals. If the child be too weak and puny to take the breast, then it will be necessary to feed at frequent intervals by teaspoonfuls, using either a sterilized mixture of cream and whey or a peptonized humanized cow's milk or a modification of Dr. Gærtner's milk. Cream and whey mixture is prepared as follows: Ordinary cream (20 per cent.), 1 fluid ounce; whey, 2 fluid ounces; and sugar and milk, 1 drachm. This should be sterilized for half an hour. The whey is prepared by adding essence of pepsin to fresh milk, which is to be gently warmed. When the milk is set, break up the curd quite small, allow it to settle, and then carefully strain it through several folds of muslin, finally squeezing the contained curd so as to extract all the moisture.

During the period of nursing several important problems will arise. For instance, should a mother continue to nurse when she again be-

*George Carpenter, M.D., M.R.C.P. Lond., *The Lancet*.

comes pregnant? Assuming that the mother and child again are healthy, the child need not be weaned until the sixth month of pregnancy. Should, however, the double drain on the mother's constitution prove harmful to both of them, shown in the case of the child by gastro-intestinal disturbances, then weaning would better not be delayed. There is also just a possibility that the reflex effect on the uterus may lead to a miscarriage. Should any tendency, to such a mishap be discovered, then the child must be fed artificially. Another point for consideration is that mentruation sometimes causes gastro-intestinal disturbance in the infant, said to be due to an increase of proteids in the milk. If this should occur, give the infant a little boiled water before feeding and reduce the meat diet of the mother. But there are some mothers who are only capable of partially feeding their offspring. What should be done? The breast milk should be supplemented by some cream food or humanized milk or a modification of cow's milk previously determined by a chemical analysis of the mother's milk. If analysis of the mother's milk is decided upon it should be drawn off by the breast pump five minutes after the child has been placed to the breast.

When a mother, from various causes, is quite unable to suckle her child, two courses are open to you—the employment of a wet-nurse or the use of some modification of cow's milk. Of the alternatives nothing can compare with a healthy wet-nurse, if her milk is suited to the digestive peculiarities of the infant to be reared. The fact that the wet-nurse should be strong and healthy and free from disease need hardly be dwelt upon or that a careful medical examination will be necessary before engaging her. She should be between twenty and thirty years of age, and if the foster child is strong and vigorous, a primipara may be selected, but should the child be weak and puny a multipara, as the milk will not be so difficult to digest. If her infant be strong and healthy this will be a point in her favor. She should not have been recently confined as the colostrum is undesirable. It will not be a drawback if there is a difference of two or three months between the ages of the children and in one respect it will be an advantage, as the wet-nurse's child would have shown any symptoms of congenital syphilis by this time if the disease be present. Of course no syphilitic child can be allowed the advantage of a foster-mother. The treatment of the nursing mother and the wet-nurse demands your careful attention. A plain, mixed diet, with slight excess of fluids and meat above what she has been in the habit of taking, will be found ample. A small quantity of alcohol may be taken if she has been accustomed to it, otherwise it is unnecessary. Alcohol in small quantities increases the quantity of fat in the milk.

Over-feeding and an excessive meat diet will make the milk so rich in proteids as to be quite indigestible. She should take exercise every day and seize every opportunity of being out in the fresh air. You must not lose sight of the fact that various drugs, some of them of a poisonous nature, pass into the milk and upset, or perhaps even poison, the child. Saline purgatives are not desirable as they are likely to stop the milk. The health of the nursing woman naturally requires attention and dyspeptic troubles or anemia will necessitate the appropriate treatment. If a wet-nurse is selected she must not be allowed to visit her child, but the mother whose child she is nursing must make it her business to see that the child is properly cared for as an anxious, fretting wet-nurse will not produce good milk. No wet-nurse should be allowed to dose her charge on any pretense whatever. The administration of opium is not unknown.

When should the child be weaned? The breasts, as you are aware, begin to fail at various periods of nursing, but no infant should be nursed longer than the first year, even under the most favorable circumstances, as rickets will surely result. When weaning has been decided upon it should be done by degrees, the artificial food selected gradually taking the place of the breast milk. The process should extend over a period of one month and at the end of that time the mother should send the child away or leave it for a few days. Do not wean a child when he is cutting a tooth and avoid, if possible, the very hot season of the year for fear of summer diarrhea and postpone it if he has just recovered from a severe illness.

In the event of a mother being unable to nurse her infant, and in the absence of a wet-nurse, what artificial food can be recommended? There is but one answer to this question and that is cow's milk. Chemical analysis of healthy human milk shows that it is composed of the following constituents: Fat[1], 4 per cent.; proteids, from 1 to 2 per cent.; milk-sugar, 7 per cent.; salts, 0.2 per cent.; and water from 87 to 88 per cent. Cow's milk, on the other hand, is formed as follows: Fat, 3.75 per cent.; proteids, 3.76 per cent.; milk-sugar, 4.42 per cent.; salts, 0.68 per cent.; and water, 87.39 per cent. From the foregoing it will be seen that cow's milk is richer in proteids and salts but poorer in sugar, therefore in substituting cow's milk for mother's milk we always dilute with water to diminish the percentage of proteids which are so apt to produce indigestion. But in doing this we are diminishing the percentage of fat and making it still poorer in sugar. Hence arises the necessity for adding sugar and cream. But treat cow's milk in whatever way you will it is only a makeshift and cannot be made to exactly resemble mother's milk. Chemically the curd is different, it is not fully di-

1 The percentage of fat according to Pfeiffer is 3.1 per cent., Adriance 3.8 per cent., Leeds 4.1 per cent and Hoffmann 4 per cent.

gested, it is also lacking an albuminoid which is present in mother's milk.

We must not lose sight of the fact that the milk in cities is more often than not, stale, that it contains many impurities, and is possibly contaminated with disease germs. Not only is this the case but many dairy companies use boracic acid or other chemicals to preserve the milk, in other words, that the consumer may be able to obtain it as stale as possible. Boracic acid is often added in such quantity as to make the milk unfit for infant consumption, owing to the indigestion it produces. Apart from such contaminations and adulterations, cow's milk differs enormously in composition according to the health of the animal, the time it has been in milk, and the quality of the food; hence the advisability of taking the milk from a mixed herd of cattle rather than from one cow, which was once the fashion. The milk of other animals can of course be used, but there is no advantage in this as their milk will require modification to imitate human milk. Milk, as soon as it is received at the house, should be placed in a clean vessel, filtered through absorbent cotton-wool to remove gross impurities, and then sterilized to free it from the various germs with which it is contaminated. After sterilization the bottles must be kept in a cool place free from all sources of contamination. Each bottle is to be unsealed and an indiarubber teat affixed when the infant is about to be fed.

In out-patient hospital practice, as also in the poorer neighborhoods, we frequently have to rely upon an unsterilized cow's milk suitably diluted with water so as to reduce the quantity of the proteids. A mixture of one part milk and two parts sugar-water, the latter of which is made by adding 1 oz. of milk-sugar to a pint of water, approaches human milk in composition but it is deficient in fat. The deficiency in fat can be remedied by adding 1 drachm of 20 per cent. cream to every ounce of the milk mixture, and failing this one-fifth of the quantity of cream in the shape of cod-liver oil should be given to the child. This mixture should be boiled for half an hour and when it is cool, a one-twentieth part of lime water added to it makes the fluid slightly alkaline. Ordinary sugar may be used instead of milk-sugar if the proper proportion is observed. In private practice Rotch's Cream Mixture will be found reliable and very satisfactory. It is a near approach to human milk in chemical composition. For its preparation the ingredients are to be mixed as soon as they are received from the dairyman in the following proportions: Cream (20 per cent.), 1½ fluid ounces; milk, 1 fluid ounce; water, 5 fluid ounces; lime water[2], ½ fluid ounce; and milk-sugar, 3⅜ drachms. I will now call your attention to the method of preparation of Gærtner's humanised milk. The fresh milk, mixed with an equal quantity of boiling water, is placed in a centrifugal apparatus. The machine is revolved at such a speed that outcoming streams become equal. From one spout pours all the cream and half the milk and water and from the other spout the remainder. The dirt remains in the machine. All the fat is thus obtained, half the proteids, half the milk-sugar, and half the salts. To bring the sugar to the required standard, 5 7-10 drachms of milk-sugar are added to every pint of this mixture before bottling. It is then sterilized in bottles which contain the milk ready for consumption. Should half the original proteids be still too large for the digestive capabilities the mixture before the sugar is added can once more be diluted with boiling water and again sent through the centrifugal cream separator, thus obtaining all the fat, a quarter of the original proteids, salts, and milk-sugar. In that case a larger quantity of milk-sugar will have to be added if the human milk standard is desired. The percentage of fat in the Gaertner milk is not sterilized to last indefinitely to 3.5 per cent. The casein of this milk when it is precipitated by the gastric juice curdles in a flocculent form in the same way as does mother's milk and not like indiarubber, as is the case with cow's milk.

It has hitherto been the custom in cases of summer diarrhea to withhold all milk and feed temporarily on albumin water, but Rotch has found that if the fat is reduced to 1.5 per cent., the proteids to 0.25 per cent.—0.75 per cent., and the sugar to 4 per cent.—5 per cent., the milk agrees very well. For prematurely born infants, the Gærtner milk can readily be adapted to their digestive capacities by reducing the proteids to 0.5 per cent., or perhaps a trifle less.

Before leaving this subject let me tell you that Gærtner milk is not sterilized to last indefinitely—it should not be kept for a long time. Full sterilization makes the milk brown from caramelization of the sugar and changes take place in the fat and sugar which make them indigestible. Further sterilization does not destroy germs with absolute certainty, any bacteria that may be left are not necessarily harmless, and proliferating bacteria cannot always be recognized by signs of decomposition. Therefore sterilized milk should not be kept for too long a period but should be consumed as soon after sterilization as possible. Sterilization appears to rob milk of its anti-scorbutic properties, therefore infants who are being fed upon it require careful watching and any suspicion of the advent of scurvy must be combated by the ingestion of orange juice.

The question must frequently present itself as to whether barley water or oatmeal water or rice water should be added to milk. These waters certainly have nutrient worth and cause the curd to split up into finer particles and thus render it more easy of digestion. If eczema is induced by the use of these gelatin jelly may be substituted.

2 The lime water is to be added after sterilization.

PEDIATRICS CONSIDERED AS A SPECIALTY.*

Until the last few years our institutions of medical learning have sadly neglected this subject in their curriculum, and it has been owing to this lack of proper instruction that the difficulties of examination and treatment have often been exaggerated.

While it is true that infants cannot express themselves except as the untutored savage by grunts and groans, cries and gestures, which require experience to interpret, tact and skill to develop, and knowledge and science to properly utilize, children are not really little men and women in whose diminutive bodies diseases manifest themselves by the same tokens that they do in the adult, and those diseased conditions are to be combated by the same remedies save in smaller doses. Infants have special constitutional peculiarities which thus give to the diseases of early life distinctive characteristics. Among these we will enumerate the following:

Excitability of the Nervous System.—The nervous system is but in a preparatory and embryonic condition. The brain is large and soft, with a large per cent. of water. Gray and white portions differ but little in color and consistency and composition. The brain does not attain its full development until months and even years after birth. At first it is in a plastic state, a state of irritability and instability. In this condition a perversion of function may result from causes which would exert no influence upon the youth or adult. The spinal cord also lacks consistency, the interior columns are more largely developed than the remainder of the cord, hence more frequently the seat of pathological changes (anterior poliomyelitis). The peripheral nerves do not exhibit all their normal functions until weeks or months after birth. They are very excitable and out of all proportion to the slow development of the inhibitory centers. For the first month after birth the connecting fibers between the undeveloped brain and the pyramidal fibers of the cord perform no function whatever, consequently the movements of the new-born are not controlled by will-power but are subject exclusively to reflex control, this continuing more or less for two years. This period of imperfect brain development is largely controlled and influenced by heredity and morbid psychic inheritance. This excitability of the nervous system is shown by the following manifestations:

1. Convulsions and coma from overfeeding. Skin hot, extreme agitation and convulsions or coma.

2. Brain symptoms, e. g., headache, vertigo, delirium, etc., without intra-cranial trouble.

3. Night-terrors in children from worms, nocturnal delirium.

4. Reflex convulsions of all kinds, having no gravity.

5. Nervous shock in diarrhea and dysentery.

6. Another factor in producing nervous symptoms in children is adenoid growths in the post-pharyngeal space. We are all familiar with this condition so commonly found in children, and realize that adenoid growths produce mouth breathers, catarrhal conditions of the naso-pharyngeal space, and many nervous symptoms.

The second distinctive characteristic is the effects of mere disturbance of function.

1. Children quickly part with heat and become chilled, hence proneness to catarrhal symptoms.

2. Sudden death from mere disturbance of function. No post-mortem signs.

3. A child is as its diathesis. The diathesis shapes its features, moulds its form and gives it its intellectual possibilities.

(a) Syphilis,
(b) Scrofula,
(c) Tuberculosis,
(d) Rickets,
(e) Rheumatism.

(a) Syphilis is generally the consequence of inherited taint. It thus presents a combination of the so-called secondary and tertiary stages of the disease. Still the progress of the disease is not entirely uninfluenced by the tender age of the patient. Infantile syphilis, like the other diathetic diseases of childhood, may effect the tissues very widely, and in many ways differently from the adult.

(b) The scrofulous diathesis is one of the most common of the morbid type of constitution which we meet in the child. This vice of constitution is often hereditary and handed down with singular persistence from generation to generation. A child who is so unfortunate as to be born with this unhappy diathesis is liable to widespread evidences of constitutional fault with which he is burdened; his skin, his mucous membranes, his bones, joints, organs of special sense, lungs, lymphatic system, are all excessively vulnerable, and may all or any of them become the seat of obstinate disturbances or incurable diseases.

(c) Tuberculosis arises in most cases as a consequence of special hereditary predisposition, and acute tuberculosis frequently assumes a form which is rarely if ever seen in adults. We have evidence of this in tuberculous joints, tuberculous glands, tuberculous meningitis, etc.

(d) Rickets is a diathetic disease of infancy; its association with syphilis is characteristic and not uncommon.

(e) Rheumatism: Here, too, we find distinctive diathetic disturbances.

Abrupt interference with the nutritive processes cause sudden death or grave symptoms, e. g., the shock of malnutrition, etc.

Sudden death in childhood differs from the same condition in adults in that it is generally

*Walter F. Boggess, A.B., M.D., in *Pediatrics*.

due to laryngismus, syncope, or collapse of lung, or thrombus of the pulmonary artery; the temperature may vary just before death from 96 deg. F. to 107 deg. F. The tendency of acute diseases is to recovery.

Children bear hyperpyrexia well.

Children seldom die of pneumonia.

Local symptoms in diseases of infancy and childhood are not always trustworthy, a peculiar sympathy exists between the various organs, so that the symptoms may be in one place and the disease in another quite remote. Convalescence is usually rapid.

The difficulties of examination are often exaggerated. All necessary information as to beginning of the trouble, when and how taken, may be elicited from the mother by careful questions. Mothers, owing to their love and solicitude, are good observers, the doctors supplying all necessary gaps. The doctor should ingratiate himself with the child and gain its confidence.

1. Do not be abrupt or in a hurry; notice a child casually at first, then strip it and inspect every part. The tint of the face, the color of the lips, the general physiognomy, all help you to properly locate the disease. Blueness of the upper lip in early life is a common sign of labored digestion. Years ago it was pointed out that certain lines or furrows in the face of an ailing child, by their position, indicated the seat of the derangement.

(a) Oculo-zygomatic line denotes diseases of the brain and nerves.

(b) Nasal denotes abdominal mischief, gastro-intestinal trouble.

(c) Labial shows diseases of lung and air passages.

2. Shape of head and limbs, attitude. cry, absence of tears, condition of fontanelle, etc.

3. Pulse, respiration and temperature.

4. Dietary habits.

5. Carefully inspect the ejecta from stomach or bowels.

6. Genital organs.

7. Rectum, etc.

TREATMENT.—1. Administration of physic is of less importance than dietary regulations.

2. Occupy large and well-ventilated room.

3. All noise and bustle to be prohibited.

4. Should be fed through nasal tube or per rectum when necessary.

5. To reduce temperature.

(a) Tepid sponge bath.

(b) Warm bath, 80 deg. to 85 deg., in convulsions and great irritability of the nervous system and in Bright's disease, remain ten to twenty minutes.

(c) Hot bath, 95 deg. to 100 deg. in great prostration, cholera infantum, urgent vomiting, remain four to five minutes, a little mustard may be added.

(d) Cold douche followed by vigorous shampooing in weakness, atony, scrofulous cachexia, etc.

6. Stimulants take a high place among internal medications.

7. Tonics, quinin, iron, mineral and vegetable bitters, cod-liver oil, etc.

8. Opium should be given cautiously.

9. Belladonna can be given in large doses. Children one year of age can take one to twenty drops.

10. Quinin, digitalis and lobelia are well borne.

11. Alkalies form a valuable class of remedies, also astringents.

12. Purgatives may be given, but do not overpurge.

OTOMYASTHENIA[1]—MUSCLE-DEAFNESS.*

The functions of the tensor tympani and stapedius muscles, are, I believe, to select and amplify such sounds as the listener desired to hear most distinctly. With a knowledge of the functions of these ear-muscles we are able to name, with a great deal of certainty, two causes of deafness that are not generally known. One of these causes is due to a paralysis agitans of these muscles, and the other is a debilitated condition of these ear-muscles, which prevents them from selecting and amplifying sounds normally, an otomyasthenia. The fact that asthenia of the ear-muscle or muscles is a cause of deafness has been intimated, I will add enough to enable one to easily select his cases of middle-ear muscle asthenia.

This disability is not very difficult of diagnosis; in fact, the patient himself will almost invariably indicate the cause by the description of his deafness, as is plainly shown by the following, from an intelligent patient, aged fifty-eight years. He says:

"I have no difficulty in understanding you, or even in hearing my little grandson, three years old, when he is talking to me from the head of the stairs; but some persons talk in such a mumbling way that their words are hard to comprehend. While I am on 'Change I can't make out one word, and I have great difficulty on the cars. If persons would speak plainly I could hear them very well. I can prove to you that I am not very deaf. When I go to a lecture, as soon as all are seated and the speaker gets started so as to stop all whispering, I hear him very well while I am fifty feet away from the platform. Last evening I was at a whist party; before the play commenced I could scarcely make out one word, because of the confusion made by all of them (sixteen persons) talking and laughing together. How they understood one another I don't know. So soon as quiet was restored I heard those at

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1 Ear-muscle debility.

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the other end of the room who once in a while made a remark to some one at their table, and the room was at least twenty feet long. You see I am not very deaf, but only so under certain circumstances. There is another curious thing: while I am eating I can't distinctly hear those on the other side of the table; the noise made in my mouth while I am chewing my food is so great as to drown the words, so I have to stop eating to hear them."

It will appear plainly that his deafness is due to the inability of his ear-muscle or muscles to select and amplify the sounds that he desires to hear, this disability being, in him, almost, if not quite, total—indeed, much greater than is usually observed in this class of cases.

It should be noticed that it is only while other noises are being made that he complains of the mumbling way in which others talk. If the other noises were not present, his hearing, while it is not good, is such that he would not for an instant think of complaining. If a person with normal ears listens to the conversation of a friend, the words of others near him seem to be spoken in a mumbling way. In this he resembles exactly the disability of the man suffering from otomyasthenic deafness, for the simple reason that his ear-muscle or muscles are not endeavoring to select and amplify the sounds of the other persons. But if this listener will turn his attention to what one of the other persons is saying—that is, selecting that one's words instead of his friend's—then instantly the words of his friend will seem as though spoken in a mumbling way. This is the daily experience of every person with normal ears.

When there was no necessity for selection and amplification, such as in the case of his grandson's voice, and in the quiet lecture-room, he heard with entire satisfaction, but when he desired to hear certain selected sounds, as the words of one of the company in a room full of noisy people, and not be bothered with the undesired sounds, his ear-organs were unable to perform the task. In a quiet room no one would consider this man very deaf; his statement of his ability to hear when there was no noise is ample demonstration of this.

It is evident that this variable condition of his hearing is not due to an abnormal condition of the auditory nerve, for this nerve cannot be obtuse in a noisy room and then acute the instant the noise ceases. For the same reason it cannot be due to tinniti of either kind. Cases of this kind very seldom suffer from muscular tinnitus; if they do, it is very weak in intensity, a significant fact. Vascular tinnitus, in varying degrees of severity, is almost always present in these cases, but it can, obviously, cut no figure in causing variableness of the hearing. This proves that this condition of the hearing is due alone to the inability of the ear-muscle or muscles to select and amplify the desired sounds, a myasthenia.

There is another method of proving that asthenia of the middle-ear muscles is the cause of deafness than by that of the patient's history of his subjective symptoms; this is by the employment of the tick of the watch.[1] These patients frequently surprise the physician by the distance they can hear the metallic tick of the watch in a quiet room. This man heard the watch $^{20}/_{96}$ R., $^{14}/_{96}$ L. It varied a very little each time in the four or five tests that were made at his first visit. After getting his hearing by slowly bringing the watch up to his ear until he heard it, I then slowly carried it away from his ear to ascertain if he could hear it some distance farther away, but he could not do so with either ear, even after quite a number of trials. This, I consider, proves conclusively that he is afflicted with complete otomyasthenia.

Many persons who could not hear the watch at the distance he did, namely, $^{20}/_{96}$ R., $^{14}/_{96}$ L., can hear the ordinary conversation of a person standing alongside of them with ease in a room full of laughing and talking people, for the reason that their ear-muscles select and amplify the words of the person they desire to hear. This my patient could not do, because of the asthenic condition of his ear-muscles.

In every person with normal ears, and in all who are only partially otomyasthenic, the tick of the watch may be heard farther than it is heard when it is slowly brought up to the ear; that is to say, if he hears it when slowly brought up to the ear at twenty-four inches (which occurred in a partially otomyasthenic patient), the watch may be slowly taken away from the ear, and he may continue to hear it as far as to thirty or thirty-six inches, if the ear-muscle or muscles are not wearied by too long a test. It seems conclusive that the increased hearing distance demonstrates that his ear-muscles amplified the sound of the watch's tick or he would not have heard it beyond the first hearing distance, twenty-four inches.

When these ear-muscle or muscles are in a complete asthenic condition the will of the listener has lost the normal control over them; but, says one, these persons can hear; yes, but they are deprived of this extra acuteness of hearing, especially in a noisy place where the election of sounds they desire to hear most plainly is denied them, which, with normal ears, all persons enjoy. The proof of this is that the hearing-distance of the watch cannot be increased even by an inch beyond the first hearing-distance, it makes no difference how frequent the trials, or how slowly the watch is removed from the ear, or how much the listener exerts himself to hear it.

After making daily examinations of the hearing-distance in this manner during the last five or six years, with a special view to this subject, I

1 The louder the tick of the watch the more satisfactory the examination. A low tick shows so little difference that mistakes may be and are almost certain to be made, which will not occur with a loud ticker.

find that otomyasthenia, in varying degrees, is by far the most frequent cause of deafness, showing the importance of understanding its mechanism.

The following is a good method of making a differential diagnosis of this kind of deafness:

While in San Francisco this summer I chanced to step into a place where the Edison phonographs were on exhibition. I was accompanied by a physician who was under treatment for complete otomyasthenic deafness. Three of the machines were so arranged that the tubes lead to one person's ears. One machine played Old Hundred, another Yankee Doodle, the third Annie Laurie. When my friend placed the earpieces in his ears, he heard a confusion of noises. The exhibitor said: "Listen, and you will hear Annie Laurie;" but he could not. "Well, can't you hear Yankee Doodle"? He could not. "Old Hundred is there, too." "No, sir; nothing but a confusion of noises that would drive one crazy if he listened to it very long." He could not hear any two tunes together, but instantly called out each of the three tunes as they were played singly. I then listened to the three machines, but could barely hear Yankee Doodle; when he stopped this machine I then heard Annie Laurie very well, when this machine stopped I heard Old Hundred, of course, proving plainly that I also was affected with otomyasthenia to a considerable degree. I took the earpiece out of my right ear, and easily selected each tune with my left ear while all three machines were playing. I suffered a serious injury of my right ear in 1869, which renders me quite deaf in this ear. This accounted for my disability.

Incidentally, I will say that the subjective symptoms of otomyasthenic deafness prove that my views concerning the functions of the middle-ear muscles are correct, namely, that their office is to select and amplify such sounds as the listener desires to hear most distinctly, showing that the ears have muscles of accommodation quite analogous to those of the eyes.

WOUNDS OF THE LIVER AND THEIR TREATMENT.*

July 24, 1896, G. S., aged fourteen, was accidentally wounded in the epigastrium (a little to the right of the median line) by a ball from a Flobert rifle in the hands of a playmate. I saw him about two hours after the accident.

Having satisfied myself that the ball had entered the peritoneal cavity, as soon as the patient had sufficiently recovered from the shock, I made an abdominal section, bringing into view the right lobe of the liver; on the upper surface of which was a stellated wound made by the bullet.

Feeling the under surface of the organ for the point of exit, the ball itself was found lying just beneath the peritoneum. This was incised and the ball removed, making an opening completely through the liver.

There was profuse hemorrhage, which was controlled by means to be mentioned later. The abdominal wound was brought together with silkworm gut, except where the gauze drains protruded, and the case treated as any ordinary laparotomy. The day following the operation the temperature was 102 degrees Fahrenheit, but fell on the second day to 99 degrees Fahrenheit, and did not rise above that point during the patient's stay in the hospital. He went home on August 23, having entirely recovered.

Wounds of the liver are usually divided into penetrating, gunshot, and lacerated. Penetrating or incised wounds of this organ are of rare occurrence, and the patient generally dies of hemorrhage before surgical aid can be obtained.

Hennen said long ago, and his opinion was generally held by most of the older writers, that a deep wound of the liver was as fatal as if the heart itself were engaged. While many cases of recovery proves this statement to have been exaggerated, no one will dispute the great danger attending these cases, nor be surprised at the excessive hemorrhage, when one recalls the fact that the liver has three distinct sets of blood vessels.

Only three cases of wounds of this class were reported during the late war, with two recoveries, and it was afterward questioned whether the liver was wounded at all in the cases which survived.

Not very long ago if a patient received a penetrating wound in the hepatic region, it was taken for granted that the liver was wounded. A discharge of bile from the external opening was considered additional evidence; but the diagnosis was never positive unless a piece of the injured organ was seen at the abdominal wound. At the present time no such uncertainty need exist. An exploratory laparotomy clears up all doubt and is the first step toward treatment.

Gunshot wounds of the liver do not cause such profuse hemorrhage as those just mentioned, and consequently are not so fatal. Of fifty-nine cases of wounds of the liver not complicating other organs reported during the late war, twenty-five recovered. One of these, I may add, was a sergeant in my own regiment.

Of one hundred and eleven cases of wounds of the liver complicating other organs, thirty-seven recovered. When we consider that these injuries were inflicted by large missiles as Minie balls, pieces of shells, et cetera, that they were often treated under most unfavorable circumstances; and furthermore, that practical antisepsis was then unknown, we wonder that the death rate was so low.

Lacerations of the liver are much more frequent in civil life than either or both of the above mentioned classes. These may occur singly, yet one case has been reported where more than a dozen were found. They may be very slight, but

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portions of the liver have been torn off and found loose in the abdominal cavity. Probably many cases of so-called traumatic peritonitis were caused by slight lacerations of the liver. Fortunately, the larger blood vessels are the last to give way in case of rupture.

Holmes mentions a case in which the liver was torn completely through and the two portions were only held together by the nerves and blood vessels. The diagnosis of this injury is at first very difficult. It is impossible to say with certainty, after a crushing accident, a severe blow on the abdomen, or a fall from a great height, whether the liver is ruptured or not, and the real pathologic condition has often only been discovered at the autopsy.

Leidler says: "The diagnosis of rupture of the liver is rendered difficult by the fact that local symptoms do not arise until late; while the danger is greatest during the first twenty-four hours and the diagnosis is surer when a wound of the abdominal wall has occurred." This is true if the wound is large enough to admit of a thorough examination of the liver. Wounds of this organ, of whatever nature, must always be regarded as serious, and although some which are apparently hopeless may recover, others which are apparently trivial may result fatally. A prognosis in any case will rarely be made.

Shock, hemorrhage, and septic infection may be the results of these wounds, and threaten the life of a patient. The treatment of shock is the same as if arising from any other causes. Some writers have suggested that alcoholic stimulants should be administered more sparingly for fear of increasing hemorrhage.

I believe that it is now universally admitted, that in all wounds penetrating the peritoneal cavity, in all injuries upon the abdomen without an external wound attended by severe shock and symptoms which may be supposed to indicate internal hemorrhages, there can be no doubt about the advisability of making an abdominal section and finding out definitely what organ or organs have been injured. The danger has been, I apprehend, not that the operation will be performed too often, but that it will not be performed often enough.

Thomas Bryant of London describes the case of a boy, aged sixteen, who walked into Guy's Hospital after having been run over by the wheel of a cart which had passed over his abdomen. The boy, although in pain, had walked at least a quarter of a mile to the hospital after the accident. When admitted he was pale and in great pain, but his pulse was full and there were no signs of internal injury. On the fifth day he rested with his legs outstretched, but rather to the right side, and later on the same day he had an action of the bowels, which was accompanied with some abdominal pain and was speedily followed by collapse and sudden death. After death a fissure three inches deep was found in the right lobe of the liver filled with blood clots and covered with lymph.

When the abdominal cavity has been opened, if the liver has been wounded, the removal of extraneous substances, if such are found, and the prompt and thorough arrest of hemorrhage are principal points of treatment. Large vessels, if they can be reached, should be picked up and ligated the same as in another region. If they cannot be taken up, oftentimes sutures placed well back from the edges of the wound will arrest the flow of the blood.

Fissures may be packed with gauze which will generally arrest hemorrhage as the blood pressure in the liver is low.

The cautery has been highly recommended, and, although I have never had occasion to use it in these cases, I can readily understand that it might sometimes be used with great advantage. Bleeding from perforating wounds can generally be arrested by drawing a piece of gauze firmly through the opening.

In a case which I had last summer, I checked it in this manner, although the hemorrhage was profuse. I tried the same proceeding with the boy shown here this evening, but the liver was so friable that the tissue gave way, increasing instead of arresting the hemorrhage.

To arrest it temporarily I placed my thumb and finger over openings in the liver and was surprised to find how slight a pressure controlled it completely. I therefore placed a compress of gauze over each opening, holding them firmly in place by bringing the edges of the external wound together with silkworm cutures, and this stopped the bleeding entirely. I thought there was less danger of secondary hemorrhage from this plan than by the use of the cautery.

By folding these compresses back and forth on themselves they can readily be withdrawn, and with very little pain to the patient. The drainage in this case was removed, I think, on the seventh day, and the boy made a satisfactory recovery.

An interesting case of gunshot wound of the liver was reported in a recent number of the New York Medical Journal by Dr. Mayo, of Rochester, Minn. In this case, the ball, after passing through the liver, was lost in the posterior abdominal wall. Hemorrhage was checked by the tampon after the manner I have already described, and the boy left the hospital at the end of twenty days fully recovered. It adds to the interest of this case to know that eight weeks after this accident the ball was located in the muscles of the back by an X-ray photograph, but as it gave the patient no inconvenience it was not removed.

Should a wound of the liver become the seat of septic infection the danger to the patient would be grave indeed. Our only hope would be in free drainage and the liberal washing out of the abdominal cavity with sterilized water and saline solutions.

The gigantic strides made in the past decade in the science of abdominal surgery have saved many lives, but as I have before stated, wounds of the liver are serious accidents, and notwithstanding the best-directed efforts of the surgeon, many of them will prove fatal.

CREASOTE AND SOME OF ITS DERIVATIVES.*

Creasote, which has long held a place among the most active medicaments, may justly be called a "marvelous" remedy in cases of pulmonary phthisis, yet in spite of this it must be admitted that side by side with many cures there is a certain number of failures on record. Bouchard and Burlureaux have proved that for really successful treatment large doses of creasote are required, and that the greater the quantity of the medicament which the patient can sustain the more chance there is of recovery. Four different means of causing its absorption into the system are available—viz., the mouth, the rectum, the trachea (by means of injection), and the skin.

The most convenient forms in which to administer creasote by the mouth are pills and solution in cod-liver oil, and in either of these forms the dose may be as much as 30 grains or even more per day. In many cases, however, doses of not more than three grains cause indigestion and, as every physician knows, a tuberculous patient should above all else be kept free from disturbance of his digestive functions. It has been proved by Hagem and Renaut that cases of dyspepsia and inflammation of the stomach, occurring in phthisical patients, were due only to the use of creasote and guaiacol. Patients who in the first stages of the treatment readily support doses of thirty grains of creasote gradually become unable to tolerate the medicament, and very few are able to continue the treatment until complete recovery is secured. It often happens that the patient has to abandon this course of treatment at the moment when a complete cure seems to be in sight.

Injection by the rectum would seem to be an improved method of administration, but, as a matter of fact, it is not; the rectum is less able to tolerate the remedy than the stomach, and after a very few days the patient loses control of the bowel and is frequently attacked by colic and diarrhea. The injection of oil of creasote in the trachea does not appear to be practical; moreover, the larynx and the bronchial tubes would probably tolerate the medicament as little as the rectum and the stomach. Burlureaux has in some cases obtained excellent results with subcutaneous injections of oil of creasote, but few patients would willingly submit to daily punctures and incur the risk of abscesses or gangrene. As creasote is a poisonous substance, the injection of the large doses prescribed by Burlureaux (from 150 to 230 grains per day) may produce excessive perspiration, coma, or symptoms of meningitis and diuresis. Notwithstanding all these objections creasote was, until the last few years, the only remedy for which it could be claimed that it had effected a certain number of cures. We will pass over the injection of oil of creasote into the pulmonary tissue, but it should be mentioned that in other cases there are numerous instances on record where the creasote treatment has been successful, such as the application of oil of creasote in the form of compresses to tuberculous and other wounds; intra-uterine after curetting with creasoted glycerine; the treatment of certain skin diseases with creasote; and intra-urethral injections of creasote in blennorrhea.

Guaiacol, which for some time received much praise, no longer holds its own. It was thought to be the active principle of creasote, and it was believed that as such it could replace the latter, but its use, either by the mouth or as a hypodermic injection (in oily solution), has not been attended with satisfactory results. On the contrary, it has frequently caused local complaints, pain, indurations, boils, abscesses, etc. Guaiacol, while possessing all the disadvantages of creasote, is in no way superior to the latter, and at present it is more and more discarded, being now only applied as a remedy to rub into the skin as a fever alleviant and on a bandage on wounds to produce anesthesia. It possesses no doubt antipyretic qualities, but the reduction of the temperature is of short duration and may be followed by excessive perspiration, collapse, or at least fainting, giddiness and nausea. Owing to these various drawbacks guaiacol does not rank among the more important antipyretics. As an analgesic, although inferior to cocain, it may be found useful, as it can be left without risk to be handled by the patient and it may also be found serviceable in skin diseases, particularly lupus, and as a dressing for wounds.

So recently as 1892 creasotal was still considered a curiosity of the laboratory. Its existence was communicated to me by one of my friends, an expert in chemistry, at a time when I was endeavoring to find a remedy for phthisis easily administered to children. Creasotal being a neutral carbonate of creasote, I assumed that it might be found useful, but I had great trouble in procuring it, and only after a long correspondence with Dr. Von Heyden, in whose laboratory it had been discovered, the latter agreed to have some creasotal made for my experiments. As soon as I had carried out my tests I made it known that creasotal was destined to supersede creasote, and my prediction is now almost an accomplished fact. In every country my experience has been put to the test and numerous observations by physicians have been published everywhere. They all agree that creasotal is a medicament as efficacious in the treatment of tu-

* EDMUND CHAUMIER, M.D., in *The Lancet*.

berculosis as creasote but without the latter's objectionable qualities. Like creasote, it increases the appetite, diminishes the cough, facilitates nutrition, and stimulates the increase in weight. Its advantages over creasote are that it can be used indefinitely without causing any gastro-intestinal troubles.

Creasotal is a compound in the form of a carbonate of all the substances found in creasote. In the digestive organs, and particularly in the intestines, it splits up into creasote and carbonic acid. This process takes place slowly and the creasote set free is absorbed, as and when generated over the whole length of the intestinal canal. On account of this property creasotal should be given as an intestinal antiseptic in cases of typhoid and puerperal fevers. Creasotal is a viscous liquid, which, however, can be made fluid by means of a hot-water bath. It has a very slight tarry taste; its oiliness is too slight to form an objection. When weak doses are required it can be given in the form of capsules of seven and a half grains. I myself, however, prefer strong doses, and therefore use pure creasotal by teaspoonfuls. Most patients will take it readily in that form, but with some it has to be covered by means of jam or even given in wafers. It can also be given in the form of a solution with oil, in emulsion with the yelk of eggs or mucilage of acacia, or mixed with a light claret or hot milk, but I prescribe it by preference in the pure state. With creasotal it is possible to proceed to a thorough course of creasotetherapy. Maximum doses of Burlureaux can be exceeded without risk and such doses can be taken by the mouth. In exceptional cases creasotal can be injected subcutaneously. For this purpose I use pure creasotal, previously warmed. Doses of 75 grains can thus be injected morning and night. The injections can also be administered by the rectum either as pure creasotal or as an emulsion made with the yelk of an egg. When the patient takes creasotal internally by the mouth, which is the method to be preferred, I give a teaspoonful morning and night for adults or in some cases even three times a day. For children under ten years of age the maximum should be two teaspoonfuls per diem, and under that age I give only half doses. The above doses have been found acceptable by practitioners generally. During the year 1897 I used creasotal and guaiacol carbonate as a pulmonary antiseptic in cases of ordinary bronchitis. As a large proportion of the creasotal is eliminated in the urine (which is shown by the odor and the dark color of the urine of many patients) I believe that it can, with advantage, be used, like salol, as an antiseptic of the urinary canal. I have used it in blennorrhea, but further experiments are necessary in all cases of urinary infections. In two cases of incontinence of urine in children, the administration of creasotal has, within my knowledge, effected a cure, but in other cases I have had no success. For dressing wounds and for treatment of tuberculosis or osseous affections, or those of the nerve tissue, the use of creasotal can strongly be recommended as an injection around or into the diseased tissues in the place of the zinc chlorid, recommended by Lannelongue. It must be admitted that the odor of creasote given off by the patient under treatment with creasotal, is a disadvantage, but this, after all, is only very slight. As contra-indicated, I only know of fever and diarrhea. Some practitioners recommend the use of creasote and creasotal in cases of fever, but I do not agree with them.

Guaiacol-carbonate is a dry, white, crystalline substance; it is used in the form of powder, sometimes as a wafer, sometimes in solution. The dose most generally adopted is 75 grains per day for adults, but this can be largely exceeded without risk. Like creasotal, guaiacol-carbonate dissolves in the digestive organs and is not more irritant than creasotal. It has given excellent results in medical practice, particularly abroad; I use it sometimes but much prefer cresotal. Still guaiacol-carbonate should not be discarded as a therapeutic agent. In a prolonged illness like tuberculosis, the patient frequently objects to taking continually the same remedy and there will then be no objection to replacing, for a time, the creasotal by guaiacol-carbonate. Guaiacol-carbonate has been strongly recommended for typhoid fever; and, according to Hölscher, even puerperal fever can be treated successfully with it. It will also be found useful as a dressing and in many cases can replace iodoform for this purpose. I have tried other derivatives of creasote, such as oleo-creasote, benzoate of creasote, and guaiacol-phosphate; but all these remedies are very rarely employed, although some could be made to render certain services.

YEAST BACTERIA IN THE STOMACH.*

In my research into the various medical works on pathologic conditions of the stomach it has never been my good fortune to see emphasized the pathologic importance of yeast bacteria in the stomach. Boas and Ewald speak of them as being present in certain conditions of the stomach, but put little or no diagnostic value on their presence. Jaksch , in his work on "Klinische Diagnostik," says that active yeast-cells are often found in the contents of the stomach, in the feces, the urine, and vaginal discharges.

In my practice I have become impressed with the great element these bacteria play in dyspepsias and will endeavor to put forward some observations I have made concerning the same.

Of the cocci from which yeast-cells are formed we have very little knowledge, save the physical fact that under conditions of perfect dryness they will remain dormant for years, but when placed in a proper medium will become active, and in a

*R. L. Graham, M.D., *Brooklyn Medical Journal.*

short while will develop into yeast-cells. Bücheler speaks in his treatise on "Branntwein Industrie" of several varieties of yeast, but states that only one variety, the saccharomyces, possessed fermentative properties on sugar. These saccharomyces are the variety used for fermentative purposes, and are the variety we find in the stomach.

In our bacteriologic work, one becomes familiar with these round cells, found in pairs, or lines, and our earliest chemical training has taught us that yeast-cells, plus grape sugar, equal alcohol, plus carbonic acid gas.

The first question to be answered is: Are yeast-cells normally found in the stomach? My experience satisfies me they are not, though I have found yeast-cells in a comparatively normal stomach; that is, where there has been no organic lesion present, and the stomach contents showed free hydrochloric acid. In a series of cases, I observed after washing out the stomach and keeping the patient on a cooked meat and vegetable diet, I was unable to find any yeast-cells present in the stomach contents. The process of cooking the meats or vegetables having killed any yeast-cells that might possibly have infected the surface of either, destroyed the means of infecting the stomach.

The next question that suggests itself is: Is the normal secretion of hydrochloric acid sufficient to destroy the activity of the yeast-cells in the stomach? Boas, Ewald, Rosenheim and others agree that HCl, has a disinfectant as well as a digestive property. While this is undoubtedly true as relates to most bacteria, yet yeast-cells are the exception, as their activity is greatly increased in an acid medium. Mærcke and Bücheler, two noted authorities on the manufacture of alcohol, advise the fermenting mass to be kept acid by the addition of hydrochloric or sulphuric acid. Yeast-cells are dormant in a strong alkaline medium, and are only active in a neutral or acid medium. This accounts for the inactivity of yeast in the intestine.

While working in Boas' clinic I observed a number of cases where yeast-cells were found in abundance, and the tests showed free HCl. A few weeks ago I had in my practice a case that will illustrate this very nicely. Mr. A., a ferry-master in one of our New York ferries, was being treated by me for subacute gastritis. After being treated a week, examination showed free HCl. in a trial breakfast of a whole wheat biscuit, but I failed to discover any yeast-cells in the contents. The next day he took a lunch of bread sadwiches to work with him, and after eating the same began to experience a distress and fulness in the stomach. His distress was so great that he came to my office and insisted on having his stomach cleansed. Large quantities of gas escaped from his stomach during the process of cleansing, and the vomit showed free HCl. and large quantities of yeast-cells. I added some moistened bread to the vomit and fermentation continued until the next day, when I threw the mass out. The patient stated that the bread in the sandwiches was stale, and had tasted slightly sour.

In what way do yeast-cells infect the stomach? The most common way is by eating baker's bread. In order to save time and to make the bread light, bakers, as a rule, add much greater quantities of yeast to the dough than do our housewives. Then again, they do not give sufficient time for the bread to rise, as the fermentative process of yeast is a self-destructive one. The old-time fashion of letting the bread rise over night is no longer the rule. This incomplete fermented dough is put into a hot oven and a hard crust immediately forms which prevents sufficient heat reaching the heart of the loaf to destroy the yeast-cells lying there. I have repeatedly broken open a loaf of baker's bread four or five days old and found it sour at the heart. Moisture is an element necessary for the activity of yeast-cells, and yeast which will be dormant in dry bread will be active in a moist stomach.

Fresh wines and grape juices contain active yeast-cells, and the so-called unfermented wine is another medium by which yeast-cells are introduced into the stomach.

Of late the so-called home-made root beers, in which a solution of yeast is added, is still another way of introducing yeast-cells into the stomach.

The early digestion in the stomach is diastatic, that is, the ptyalin converts the granulose of cooked starch into sugar. This conversion of starch has various stages. In the alkaline medium of the saliva we have the starch converted into erythrodextrin and into achroodextrin, but in the acid medium of the gastric juice we have the dextrins converted into maltose. Mærcker, in his treatise on "Branntwein Industrie," says that the presence of yeast changes all sugars in a mineral-acid medium into glucose. Thus, we have the dextrins and maltose converted into glucose in the stomach.

This glucose is readily attacked by the yeast bacteria, as here we have the most favorable conditions for their activity, namely, moderate heat, moisture and acid medium. The glucose is changed into alcohol and carbonic-acid gas, with minute quantities of lactic acid.

The symptoms produced by this fermentation are indeed common among our American people. The feeling of fulness in the stomach, gradually coming on after meals, and relieved when the patient has been able to belch up gas, is undoubtedly due in a vast majority of cases to the presence of carbonic-acid gas formed by the fermenting mass.

The drowsiness and languor after meals is due somewhat to the absorption of the alcohol formed in the decomposition. While the sourness of, and burning sensations in, the stomach, so often

complained of, are to a certain extent due to the presence of lactic acid.

I will here cite a case:

Mr. C., a carpenter, living in a furnished room and taking his meals in a restaurant, applied to me for treatment. Before his wife's death, which had occurred a few months previous, he experienced no distress in his stomach. Shortly after her death he began to suffer from fulness in the epigastrium after meals, which gradually increased till it became distressing. Likewise, he suffered from drowsiness after meals. The more severe his distress in the stomach was the sleepier he became, till he claimed after eating a hearty meal he must have a nap.

Examination showed position of stomach normal; no marked tenderness on pressure. HCl. present in the trial meal, and no perceptible atony of the muscularis. Abundant yeast-cells were in the stomach contents.

His wife had been a great cook, he claimed, and always made her own bread. I washed his stomach out with a mild solution of resorcin for several days in succession and cut yeast bread out of his diet. On his last visit he stated that while he slept less at night, yet he was bright throughout the day, and suffered no distress from his stomach.

It would seem as though the process of baking was sufficient to destroy all the yeast-cells in the loaf. Undoubtedly in a slow fire, and in a loaf of small circumference, the bacteria would be completely destroyed. The French cooks seem to have this idea, for, instead of making their bread of a brick or circular shape, as we usually do, they make their bread of a thin, cylindrical shape. It is a common sight to see in the bake-shops of Paris the loaves of bread from four to five feet long, and of a diameter from four to five inches. By lessening the thickness of the loaf they enable the heat to more thoroughly reach the heart. Again, these loaves are baked in separate pans, not as our American bread is made, that is, from six to ten loaves together in a pan, which adds to the protection of the yeast-cells in the center loaves.

The treatment consists in the removal or destruction of the yeast-cells in the stomach, and the prevention of reinfection.

When it is possible to do so, repeatedly washing out the empty stomach for several days in succession is the best means to secure the removal of these cells. Plain water or a weak antiseptic solution may be used, but the washing should be more thorough than in other pathological conditions of the stomach. However, we frequently meet patients who will not be persuaded to submit to having their stomachs washed out, yet they present all the symptoms of yeast infection. The bichlorid of mercury in 1-25-grain doses, given on an empty stomach, three times a day, will be found very efficient. In a case recently treated by me I met with good results from its use. Mrs. O. S., aged fifty, widow, of good means and living in luxury. General health fair; could discover no organic lesions save flabbiness of the abdominal wall, with no marked tenderness over the epigastrium. She complained of distress, a fulness in her stomach, a drowsiness after meals, and a continuous belching up of a sour gas. She absolutely refused to have her stomach washed out, so the diagnosis in this case had to be founded on a probability. She gave a history of tea and bread being her principal articles of diet.

By putting her on liberal meat and vegetable diet, and prescribing large doses of HCl. with hydrag. bichlor. I was able to afford her much relief. Like many women of her temperament she could not be restrained in her diet, and would occasionally eat bread, which would cause a return of the distress, but the former medication would always succeed in relieving it.

To prevent the reinfection of the yeast bacteria in the stomach we must find some substitute for baker's bread in the diet. Where it is possible to do so, have the patient eat home-made bread that has had at least twelve hours in which to rise. Whole-wheat biscuit, or shredded-wheat biscuit, is probably the best substitute at the beginning of the treatment. These have the additional benefit of being slightly laxative. Aerated bread is certainly good, but I always insist on it being toasted, or stale. Graham crackers or wafers have been tried, but I cannot recommend them. Among the Scotch and Irish people we have what is called "bannock bread," which consists of oatmeal and flour moistened and patted into cakes and baked in the oven, which is to be recommended in these cases, especially when accompanied with atony of the muscularis of the stomach and bowels, it is quite effectually laxative. The substitution of baking powders for yeast in making bread is to be advised.

Undoubtedly the majority of dyspeptic cases where yeast fermentation exists are complicated by other pathological conditions, yet these conditions are certainly aggravated by this fermentation, and much relief will be afforded by checking the same. I have seen quite a number of cases where I have cause to believe the entire trouble was due to yeast fermentation, and other cases where the yeast fermentation has been an important element in the disease.

Cerebral Hyperemia.

℞ Emplast Sinapis..... 5x8.
Sig: Apply over nucha.

Give internally.

℞ Potass Bromidi,
Sodii Bromidi,
Ammon Bromidi, aa ʒ i.
Liq. Ammon Acetatis..... ʒ ii. ss.
Syr. Simplicis..... qsft. ʒ vi.
M. S. A tablespoonful every 3 hours until relieved.

N. A. Jour. D. & P.

SOCIETY REPORTS.

SECTION ON ORTHOPEDIC SURGERY, NEW YORK ACADEMY OF MEDICINE.

Meeting of February 17, 1898.

DR. E. G. JANEWAY, president of the Academy in the chair.

DR. T. H. MYERS read a paper on

Non-Tubercular Inflammations of the Spine.

The following is an abstract:

Syphilitic inflammation of the spine was found in all regions of the column and might involve any of the tissues and any of the vertebral parts, with the exhibition of periostitic, osteitic and other varieties of inflammation. In the cases of two boys whose histories were related, the cervical and dorsal regions were affected respectively. In the former there was the deformity of wry-neck and in the latter a kyphosis. Pain and rigidity were present. There was no history of transmission but the presence of syphilitic dactylitis and prompt and repeated response to antisyphilitic medication determined the diagnoses. Both patients were much relieved by mechanical treatment.

DISCUSSION.

DR. W. R. TOWNSEND said that this form of spine disease was a rare affection. The kyphosis did not differ from that of the spine affected with tuberculosis and there was generally a history of inherited syphilis.

DR. H. R. SAYRE said that in making a diagnosis in children the presence of multiple arthritis would indicate syphilitic rather than tubercular disease of the spine, especially if the child were under 18 months of age.

DR. B. LAPOWSKI said that dactylitis syphilitica had no characteristic symptoms and was therefore valueless in distinguishing between syphilis and tuberculosis. Neither was a response to anti-syphilitic treatment, a certain guide since anti-syphilitic medication produced good results in tubercular diseases and of late hypodermatic injections of sublimate had been used with good effect in gonorrheal rheumatism.

THE PRESIDENT said that it was not rare to see a person suffering from both tuberculosis and syphilis. He had also seen cases which were thought to be tubercular but which yielded to anti-syphilitic treatment.

DR. MYERS said that the relation of congenital syphilis to tuberculosis was not well understood. It was possible that transmission might make the offspring a more than usually favorable soil for tubercular infection. Moreover, there were cases of a mixed infection, a tuberculous subject acquiring syphilis or vice versa. Rheumatic inflammation of the spine was more certainly recognized. In rheumatoid arthritis, which was by far the most common, other joints were also affected and there was slowly increasing and poorly defined deformity from inability of the column to withstand the superimposed weight, with a varying degree of pain. Mobility and pain declined together and the latter ceased when ankylosis was established. The bones exhibited sclerosis with atrophy and absorption under pressure. Active medication was required with protection and immobilization. Every effort should be made to secure ankylosis, if it was inevitable, in the best possible position of the spine.

DR. C. C. RANSOM would make a clear distinction between spinal rheumatoid arthritis and rheumatic disease of the spine. The latter affection, when limited to the spine, was comparatively rare and usually affected the lower dorsal and upper cervical regions, rarely exhibiting cartilaginous and osseous changes, and fibrous ankylosis due to ligamentous changes only in exceptional patients and in those of advanced years. Rheumatoid arthritis of the spine, on the other hand, exhibited muscular atrophy, deposits about the joints and characteristic deformities of other affected joints. In its treatment the classic remedies used in rheumatism had little if any effect, and, with the exception of potassium iodid, were more apt to do more harm than good. In the treatment of rheumatism of the spine, however, the methods usually employed in rheumatism would be found to give good results. Specific remedies, such as salicylic compounds, potassium iodid and colchicum might be used in the active stage and to relieve distressing symptoms, but to cure the trouble dependence must be on general tonic and hygienic treatment including iron, arsenic, the hypophosphites, hydrotherapy, massage and, when pain on motion had sufficiently subsided, proper forms of active exercise regularly carried out.

DR. TOWNSEND would recall but one or two cases in which the diagnosis of rheumatic affection of the spine could be clearly made out. He referred to rheumatic changes in the bones and joints of the spine. Rheumatic pains affecting the spinal muscles were sufficiently common.

DR. SAYRE recalled a case which at first seemed to be tubercular inflammation of the crevical spine. There were pain and limited motion. A support enabled the patient to move without pain. Different diagnoses were made by a number of observers. Syphilis was eliminated. Atrophy and an inelastic condition of the muscles suggested a nervous origin of the trouble. The inflammation progressed and a few years later the entire spine was rigid. Stiffness of the costo-sternal and costo-vertebral joints interfered with full respiration and other joints were involved. There had been some relief from gentle massage.

DR. MYERS said that the diagnosis of malignant disease of the spine was readily made in cases in which a malignant growth had already occurred in another part of the body, but if the primary manifestation was in the spine the affection might be overlooked. The growth might infiltrate the bodies, transverse processes, laminae and spines or occur externally on the sides of the vertebrae. Small metastases might occur in the neighborhood and the spinal nerves were oppressed by invasion in the inter-vertebral foramina. The average duration of life after the onset was eight months. The most constant symptoms were pain and motor paralysis. Kyphosis was found in some cases. Severe pain and the occurrence of sensory paralysis before the appearance of the motor symptoms were considered as rather diagnostic.

DR. V. P. GIBNEY said that this affection was very interesting to the general practitioner and to the specialist because of the peculiar symptoms and the difficulty of making the diagnosis, which, however, could as a rule be made early. The severity of the symptoms was so great and the pain in certain regions was so acute and persistent that their significance could generally be recognized. Another point was the cicatrix in the mammary region showing a previous amputation of the breast, a fact which was often concealed by the patient. If this was found, the disease of the spine was undoubtedly malignant.

DR. B. F. CURTIS had operated in a case in which the diagnosis was uncertain. The patient was a woman of 35 years. The right breast had been amputated a year previously for a supposed malignant growth. She had complained for five months of pain, not very severe in the back and chest. Examination showed practically nothing. Later the knee reflex was lost and very soon anesthesia appeared. The prick of a

pin was not felt below the level of the umbilicus. There were retention of urine, involuntary discharge of feces, complete paralysis of the lower extremities and kyphosis in the mid-dorsal region. A bed-sore developed over the sacrum. The patient was examined by a number of men whose diagnoses varied from secondary deposit to Potts' disease. Operation was urged and rather against his own judgment, as he favored the former opinion, he was induced to do a laminectomy on the fifth, sixth and seventh dorsal vertebrae. He found the cord slightly compressed and congested. The sixth dorsal was softened and projected somewhat against the anterior surface of the cord. There was, however, no marked thinning of the cord and nothing in the cord to account for the severity of the symptoms, which were not relieved. The wound healed by primary union but the bed sore was very extensive and the sacrum necrotic. The patient died of sepsis on the sixteenth day after the operation.

DR. C. N. DOWD referred to the tendency of breast cancer to form spinal metastases. In twenty-nine cases there were five in which this had occurred. The suffering was intense. The possibility of such a metastasis was a strong argument for early operation on the primary growth.

THE PRESIDENT said that the primary malignant disease of the spine was rare, but its appearance secondarily was not uncommon. In the latter case, if the pain was severe, the diagnosis could generally be made. The diagnosis of primary new growth in the spine was more difficult, but could usually be made by watching the course of the case. There was usually great pain and often paraplegia, so that the name *paraplegia dolorosa* had been applied to the disease. There was no pain more severe. If the patient developed pain in the spine after having had a tumor removed there was probably a location of the disease in the spine, although the surgeon who operated might not want to admit it.

DR. S. LLOYD had operated for the removal of an hydatid tumor of the spine in a case in which the diagnosis had long been uncertain. There was a distinct kyphosis and among the symptoms had been pain in the lumbar region, partial sensory and complete motor paralysis, vaso-motor disturbances, sphincter paralysis and cystitis. The patient had been treated by a number of surgeons for tubercular disease of the spine. Nine years from the beginning of the symptoms the tumor was discovered and removed from between the processes of the eighth and ninth dorsal vertebrae where the adjacent bones were eroded. The paralysis disappeared and the man went back to his trade. A few months later he died paraplegic after being crushed in a railroad accident. The spine was fractured and at the autopsy two hydatid cysts were found in the cauda equina.

DR. MYERS said that gonorrheal inflammation of the spine was a very rare affection and that typhoid spine was more common, depending on an inflammation of the periosteum or other fibrous structures. Infectious inflammations of the spine followed attacks of the infectious diseases of childhood. He gave histories of two cases in which wry-neck, not differing from that of vertebral caries, had disappeared without sequel after treatment by the application of a brace with a chin-piece.

DR. SAYRE had seen only one case of gonorrheal disease of the spine. The history was clear and there were pain and disability of the spine, a slight kyphosis and stiffness in the other joints. He had seen a few cases in which erosion by an aneurysm with marked kyphosis had been confounded with Potts' disease. Cases were on record in which suspension for the reduction of the kyphosis had been followed by rupture of the aneurysmal sac and death.

THE PRESIDENT said that several such cases had come under his observation which had been supposed to be tubercular disease of the spine. In one the patient suddenly fell back in bed and expired.

DR. MYERS said that traumatic inflammation of the spine was seen in adults more often than in children and was usually the result of considerable violence. The kyphosis was not often significant. An abscess sometimes followed and the symptoms might include pain in the spine, not anteriorly, great disability, muscular twitching and an exaggerated knee reflex. The prognosis was good except in severe injuries. Fracture should be carefully protected and for a long time.

DR. LLOYD said that the violence might cause tearing of the muscles and possibly an infected inflammatory area with rigidity but without kyphosis. There might be paralysis below the point of injury with rectal and vesical symptoms and in some cases an abscess with finally good recovery. In other cases a greater degree of violence produced partial dislocation or fracture, with or without kyphosis. In these cases the crepitus was especially important as symptoms of compression of the cord might not appear till two or three weeks after the injury.

DR. G. R. ELLIOT said that when we had a distinct lesion of the spine such as fracture of the vertebrae, laceration of the ligaments, extra-dural hemorrhage, the cord itself escaping, together with clearly demonstrable objective signs such as possible bony changes, muscular atrophy, some motor paralysis and distinct electrical degenerative reactions, we had a condition far from common and one very much more valuable in a medico-legal sense than the neurotic symptom-group called *railway spine* which, when standing alone and unsupported by objective signs, admits of endless neurologic speculation.

THE PRESIDENT recalled the case of a woman who had been shot in the mouth with a blank cartridge. Stiffness of the neck and spinal paralysis developed and the autopsy showed suppuration running down the cervical vertebrae beneath the periosteum and into the inter-vertebral foramina with a secondary inflammation of the cord. Also the case of a boy who had been kicked over the sacrum and who was suffering from what was supposed to be spinal meningitis. An autopsy showed necrosis of a portion of the inner surface of the sacrum with exudate outside of the dura mater but running along the roots of the nerves and also an inflammation with exudate intradural and subarachnoid.

DR. TOWNSEND said that instances of non-tubercular inflammation of the spine were extremely rare in comparison with the vast number of tubercular cases which came under observation and treatment.

DR. A. B. JUDSON said that when a patient complained of spinal pain and spinal disability, the first thought was to exclude Potts' disease. It was strange that these symptoms were not found in a condition so closely simulating fracture or the worst type of traumatism. On the other hand, in the non-tubercular inflammations as a rule spinal disability and pain were early and prominent symptoms, marking a frank and sometimes alarming onset, very different from the long continued and insidious approach of vertebral caries.

DR. GIBNEY said that we were not apt to look for tuberculous diseases of the spine in adults while they were very frequent in children.

THE PRESIDENT said that the possibility of making a mistake should be born in mind for instance in an injury occurring in a man who was both tubercular and syphilitic. The only way was to go over all the points of each disease and exclude as many as possible, not forgetting that two diseases might be present in the same patient.

DR. MEYERS said that if a patient were curable within a year the diagnosis of tuberculous spondylitis should be reconsidered. From a medico-legal standpoint it was important to remember that a considerable number of chronic and increasing kyphoses were not tubercular in their origin and that such disabilities should not be rated so high in awarding damages as those which were tubercular. In life insurance, also, applicants with non-tubercular impairment of the spine should have a more favorable consideration than those whose disability had a tubercular origin.

PROCEEDINGS OF THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated meeting, February 8, 1898, the President, Frederick A. Packard in the chair.

DR. D. J. MILTON MILLER read a paper entitled

The Use of the Farinacea in the Diet of Later Infancy.

(See page 63.)

DISCUSSION.

DR. J. P. CROZER GRIFFITH—I feel much obliged to Dr. Miller for his useful and interesting paper, with very much of which I agree. Yet as he has mentioned the book which I am guilty of having written about the care of children, and has criticised greatly my diet lists, I may defend it by saying that I thoroughly believe what I have written there.

There is no absolute rule which we could possibly apply to all cases. It is impossible, too, to assume an absolute age limit for any sort of diet. Take for instance, the custom of giving no starch before the age of one year. Most physicians agree that starch should not be given, basing this on the belief that the infant's saliva is not capable of digesting it at this early age. It is interesting to note that Dr. Jacobi—than whom none is higher authority in children's diseases—has for more than twenty years maintained that even in early infancy starchy food is not only frequently useful, but is often absolutely necessary and that he states too, that Heubner, after much writing upon infant feeding, adopts much the same view.

My own feeling has always been against the use of starch before the age of a year, but after much experimentation upon children I have come to the opinion that sometimes children do, for various reasons, require starch earlier than I had at first supposed, although I still believe that this is the exception and not the rule. Now if that is true of younger children it must be still more true of those past the first year of life.

The chronic gastro-intestinal catarrh of which Dr. Miller speaks is a common disease; but it is very uncommon when we consider the enormous number of children feeding upon starchy food who do not suffer from this disease. Certainly it must occur much more frequently than it does before we can say that no children should be given starch.

The diet list for one year, as I have given it, suits, I think, most children. Of course we have to watch carefully in trying any new article of diet. Dr. Miller quotes me correctly that the list given contains the extreme of what a child may have from one year to eighteen months. If I find a child doing beautifully at the age of twelve months upon a diet of milk solely there seems to me really no hurry that it should be given starch, merely because it is twelve months old.

The custom of giving potato is common and is to be deprecated. I am growing more and more of the opinion that potato starch is not a very digestible article for children in the second year of life and I have taken the liberty of modifying in the second edition of my book what I have said of potato in the first edition. I can recall two cases seen within the last few months, in which potato undid all the good I had been trying to do by careful diet. Oat meal I would not so promptly condemn as Dr. Miller is disposed to do. It has been my custom not to give animal fiber before eighteen months, but to use beef juice instead.

I imagine that no author of any book for mothers means to present a diet list which a mother may use as she pleases just because the child has reached a certain age. Such certainly was not my intention nor my teaching. The family physician should say to the mother, "You may use such and such articles."

In conclusion I would say that while I agree with Dr. Miller that starch is not well borne by many children, I would yet not hestitate, as a rule, to give it to children who had reached the age of one year. In fact I think that most children should have it in small quantities after this age.

DR. MILLER—I think the trend of my paper was somewhat misunderstood. I quite agree with Dr. Griffith that small amounts of starch are digested by infants. The point I intend to prove and what my observation seems to prove is that the more solid preparations of starch given so abundantly by many people to young children are the cause of much ill health and sickness. During the first year the starches can be given, but in that case they are given simply as a diluent to the milk, and best, as Dr. Jacobi states, in very large dilution, (I have always suspected that much of his success is due to this fact). He recommends in an infant under two months old a very thin decoction of oat meal or barley; take a teaspoonful of either ground in a coffee mill and a pint of water, and boil 15 minutes. This is really a more glutinous decoction. He directs milk to be diluted four or five times with this decoction during the first two months, gradually increased until, at the sixth month, the child is getting half and half.

There is no objection to giving starch in this way; but my own observations are that a child will do better up to 18 or 24 months on a diet in which the farinacea particularly in indigestible forms, are largely excluded. Given as gruels mixed with milk they are of great value. Repeatedly I have seen children whose condition was delayed cut their teeth in a very short time after administration of a mixture of made barley or wheaten gruel with milk, particularly that made from the whole grain.

DR. SAMUEL MCC. HAMILL reported

A Case of Auto-Intoxication in an Infant of Fifteen Months.

(See page 63.)

DISCUSSION.

DR. A. A. ESHNER—Were it not, perhaps, better in discussing the subject as Dr. Hamill has presented it, to use the term autointoxication rather than autoinfection? While I admit that in the present interpretation of the word it is not impossible for autoinfection to occur, it seems to me that this condition must take place very rarely. I use the term "infection" myself and it seems to me it is the general use of the present day, to indicate a condition that is dependent upon a cause which is capable of multiplication and transmission. The intoxications usually do not conform with this definition. The infectiousness of diseases that belong in this group depend upon the vitality of their exciting causes. In contrast, there occurs in the intoxications a gradual dilution and attenuation of the injurious agent, so that finally its power is entirely lost and its influence ultimately disappears; while in the infections the condition is quite the reverse. A small amount of infective material can be enormously multiplied and in this way its influence indefinitely increased. A great deal of what Dr. Hamill said leads me to believe that it was autointoxication of which he spoke rather than autoinfection. It cannot be denied that the latter condition may occur. Thus, a careless tuberculous patient, who will dispose of his excreta in an indifferent manner, may reinfect himself, by contaminating his food or drink, or by direct introduction of the micro-organisms into his mouth or into wounds upon the surface. So, too, the patient harboring tapeworm may reinfect himself or herself, may produce autoinfection by contaminating the fingers, perhaps, or some other portion of the body, with the ova of the parasite, and receiving these into the stomach where they go through another stage of development; or the ova may gain entrance into the stomach by the migration of portions of the parasite, or through reversed intestinal peristalsis. It seems to me that occurrences like these might

be considered instances of autoinfection, while most of the manifestations that come under our observations as symptoms arising from gastro-intestinal derangement, are toxic in nature and not infective or of bacterial origin primarily.

DR. A. E. TAYLOR—I sympathize very much with Dr. Hamill's limitations in the use of these terms, which are certainly too loosely employed. A good illustration is pernicious anemia, which, it seems to be well established, must be regarded as a condition of excessive blood-destruction due to a poison absorbed probably from the gastro-intestinal tract and acting largely in the portal circulation. In one case Hunter found a ptomain, and at once the disease was classed as a ptomain-intoxication. Since then I have searched for ptomains in the urine of patients with pernicious anemia, and leukemia, and always with negative results; and as that has been the experience of nearly every one who has hunted for them we cannot continue to consider this anemia as a ptomain intoxication although we are certain that it is an intoxication. It is very easy to say "ptomain poisoning," but it is very difficult to find the ptomaines. The term should not be used unless we can demonstrate the existence of the ptomain or the cases possess a characteristic symptomatology—which we do not as yet know. The diagnosis should be as rigidly made as in any case of poisoning, as for example, in lead-poisoning.

DR. EDSALL—I have examined the feces and urine of several cases by Brieger's method, and have been unable in any of the cases to discover any ptomains, even though it seemed quite probable that gastro-intestinal auto-intoxication existed. One was a case in which attacks of syncope for extreme giddiness with a good deal of prostration, came on at the same time with marked constipation, and the relief of the constipation entirely dispelled the other symptoms. Another case was one of extreme dilation of the stomach, with stagnation of food, and in this case there were repeated attacks of prostration with diarrhea without any evident cause other than their dependence upon the condition of the stomach. Indeed, our knowledge in regard to the actual existence of ptomains in cases of suspected gastro-intestinal auto-intoxication is very scanty. Gumprecht, in recently discussing auto-intoxication in tetany occurring in dilatation of the stomach, was unable to satisfy himself that any observer had proven the existence of toxic substances in the excretions of such cases or in the stomach contents, and in his own case, he was unable to isolate such substances from either the urine or the stomach contents. Such cases would seem to offer the best of opportunities for ptomain formation.

DR. J. F. CROZER GRIFFITH—The form in which these auto-intoxications show themseves oftenest in children is that in which there are marked gastro-enteric symptoms. In the milder forms we see only a coated tongue, constipation and vomiting of moderate degree, the whole attack being over in a day or two. We err if we attribute the condition to something the child has just eaten, which has disagreed with it. It is rather that there has accumulated in the system, perhaps the result of indigestion, bodies of a poisonous nature. The gastro-enteric symptoms come from the inside rather than the outside. It is some fault of metabolism.

Dr. Rachford has written some very interesting articles tending to show the influence of xanthin and paraxanthin in producing various symptoms which may be classified as those of auto-intoxication; but whether these bodies or others found in the urine are the cause is not yet certain.

One of the severest forms of auto-intoxication is that going sometimes under the name of cyclic vomiting. In this condition there develops at intervals more or less separated, violent, repeated, uncontrollable vomiting, lasting, it may be for days, attended by profound collapse and sometimes terminating fatally. Yet the condition can in no way be associated with any recent indiscretion in diet. Dr. Snow, of Buffalo, has reported such a case, and Dr. Holt another. In the latter the symptoms appeared to be possibly of lithemic nature, since there was evidently retention of uric acid in the system during the attack, and freer excretion of it after the attack passed off. That is, the relation of urea to uric acid was decidedly altered.

In the last year or two I have had several cases of this cyclic vomiting under my observation, two of them desperately ill, and one other ending fatally. I have not been able to obtain satisfactory examinations of the urine in all the cases, but so far as they have extended they would indicate a similar alteration of the relation of urea and uric acid. Yet, after all, the retention of uric acid is perhaps only a symptom and not a cause. It is just as likely that some other substance in the urine may be at work, whose nature we do not at all understand. It is possible, too, that the attacks are of the nature of a neurosis purely, not dependent upon any poison; but I confess that they seem to be dependent more probably upon auto-intoxication.

DR. F. SAVARY PEARCE.—I merely wish to verify what Dr. Griffith has suggested, that many cases of so-called auto-intoxication are probably of a metabolic origin. We are apt to lay too much stress upon the micro-organismal cause of these symptoms in children, and in adults; whereas they may be due to excretions and the intestinal irritation is then the result of a metabolic excretion by the gut, as of uric acid which should normally be thrown off by the kidneys mainly. I have had some experience in the quantitative testing for uric acid and in a patient with aggravated and alternating constipation and diarrhea found that upon the whole there was marked diminution of uric acid in the urine. The question came to my mind after I had been studying this and other cases, whether the diarrhea this neurasthenic man had at times, was not perhaps due to the uric acid excretion by the intestine; and it seems to me that this one detailed * case pointed pretty conclusively to a uric acid excretion by the intestine. There was no other discoverable cause. I wish to affirm belief in the metabolic origin of many obscure cases with intestinal symptoms and that micro-organism, and their products are given too wide a rôle in the etiology of gastro-intestinal symptomatology.

DR. S. MCC. HAMILL.—The work which Dr. Edsall has referred to I have seen. I was very much impressed with the results of the analyses there given. I do not think that in the long list of cases collected, one could say that a substance had been isolated which could be considered to hold a definite causative relationship to the existing tetany. Bouchard has laid great stress upon mild degrees of dilatation of the stomach as a cause of auto-intoxication, I think, entirely too much. I believe that the conditions in the intestinal tract are much more favorable to the development of fermentative processes and to consequent formation of toxic substances. Constipation is a much more common condition than dilatation of the stomach. It gives rise to a retention of toxic substances in the intestinal tract, and as a result of a diminished peristalsis, there occurs a lessened secretion or excretion on the part of the intestinal mucous membranes. It is not improbable also that toxic substances which may be eliminated in this condition, by gradually accumulating within the intestine, are re-absorbed. I have referred in my paper to the importance of the gastro-intestinal tract as an organ of elimination, to which fact Drs. Griffith and Pearce have also referred. I am not inclined to consider the gastro-intestinal symptoms, which we frequently meet with in these cases, secondary manifestations, as these gentlemen are. In my experience the auto-intoxications observed in children have always

* The Rôle of Uric Acid in Certain Types of Neurasthenia. *Virginia Medical Semi-Monthly*, June 25, 1897.

been preceded by some evidence of gastro-intestinal disturbance, most often by constipation. In the case which I have reported tonight, the very first manifestations were of gastro-intestinal origin, the toxic symptoms occurring gradually and becoming most profound after all evidences of the gastro-intestinal disturbance had disappeared.

DR. ALFRED HAND, JR., presented

A Contribution to the Therapeutics of Enuresis.

The patient, a boy aged two years and nine months, had been under treatment for some time without effect although all the ordinary medicinal and hygienic measures had been tried. By mistake the child took four times daily, a pill which had been prescribed for the mother, which contained ext. cannabis indica gr. ¼, hyoscyamin gr. $^1/_{400}$ and zinc phosphide gr. ⅛. The enuresis ceased within three days and has not returned. The pills were continued for two weeks with no ill effects.

Formulæ.

A Pill for Migraine.

The *Journal des Practiciens* gives the following formula.

℞ Quinine valerianate..... 1½ gr.
Caffeine citrate..... ¾ gr.
Extract of Indian hemp..... 15-100 gr.

M. Two or three such pills to be taken daily.

—*N. Y. Med. Journal.*

Sciatica.

℞ Sodii glycero-phosphat..... 5 gm.
Aq. dest..... 20 "

M. S. Inject ¼ c.c. deeply into muscles near the nerve.

It is not painful, and recent cases soon recover, while inveterate instances are improved.—BILLARD.

Treatment of Cardiac Complications of Arterio-Sclerosis.

To stimulate diuresis and increase the elimination of lime compounds by the kidneys:

℞ Sodium bicarbonate..... 10 gm.
Neutralize with:
Lactic acid..... q.s.
Then add:
Lactic acid,
Syrup .....aa 10 gm.
Distilled water..... 180 gm.

M. To be taken in the twenty-four hours.

RUMPF.

Whooping-Cough

℞ Tr. bellad..... 10 gm.
Phenacetin..... 5 "
Spirit. frumenti..... 15 "
Ext. fol. castaneæ..... 60 "

S. For infants of one year, ten drops. For children of ten years, one drachm every two or six hours.

—LANCASTER.

Acute Pneumonia.

℞ Beechwood creosote..... 25 gm.
Tincture of gentian..... 50 "

M. S. From 25 to 150 drops a day in wine.

CASATI, *Med. Rec.*

Typhoid Fever.

For an adult:

℞ Salol.....	℈ ij.	2.60
Thymol.....	℈ ij.	2.60
Tablets of cupric arsenite (aa gr. 0.01)	No. xx.	
Papoid.....	℈ ij.	2.60
Guaiacol carbonate.....	ʒ ss	2
Pulv. saponis.....	gr v.	0.33

M. ft. caps. No. xx. S. One every four hours with milk.

For children:

℞ Beta-naphthol, dissolved in heated oil	gr. xxiv.	1.56
Ol. amygdal, dulcis, dis. in heated oil.....	ʒ ss.	16
Ol. cassiæ.....	m i.	0.06
Pulv. acaciæ.....	q. s.	
Glycerini.....	ʒ ss.	16
Aquæ.....q. s. ad	℥ iij.	96

M. ft. emulsio. S. One teaspoonful every four hours with milk for a three-year-old child.

—E. VIKO, *Mec. Rec.*

Sciatica.

℞ Nitroglycerin, alcoholic solution (one per cent.). ..... ʒ ss.
Tinct. capsici..... ʒ iss.
Aq. menth. pip..... ʒ iiij.

M. S. Five drops thrice daily in a tablespoonful of water for the first three days, and ten drops thrice daily on the following days.

—TROUSSEVITCH.

Hemorrhoids.

℞ Ferri subsulph..... gr. iij.
Plumb. acet..... gr. i.
Mass. hydrarg..... gr. ss.
Ol. theobrom..... q. s.

Ft. suppos. i. Introduce one morning and evening.

—ORVILLE HORWITZ, *Polyclinic.*

Vaginal Wash.

℞ Powdered alum,
Powdered boric acid,
Powdered borax .....aa ʒ iv.
Hydrastine sulph..... gr. xl.
Carbolic acid,
Oil of cinnamon .....aa m lxxx.

Triturate. S. Use one teaspoonful in a pint of hot water for vaginal injection once daily.

W. B. HOUSE, *Mec. News.*

Seasickness.

℞ Chloroform,
Tincture of nux vomica.....aa gtt. x.
Compound tincture of lavender..... ʒ i.
Water..... ʒ x.

M. A teaspoonful to be taken every hour until the vomiting and nausea have subsided, care being taken to shake the bottle each time before the dose is poured out.

—BARBAS.

Tuberculosis.

℞ Creosote (beechwood)..... ʒ i.
Tr. gentian..... ʒ i.
Alcohol..... ʒ i.
Vin. albi.....q. s. ad ℥ iv.

M. S. One drachm in wine three times a day.

—SMITH.

Periscope.

PATHOLOGY.

Drs. Melbzer and Norris, of Columbia University, have conducted an investigation to determine whether **lymph, as well as blood, is germicidal.** Uttall, nine years ago, described the bactericidal action of the blood, and found later that the aqueous humor, pericardial fluid, and a pleuritic fluid poor in cellular elements, also possessed bactericidal power. Prudden also showed that ascitic fluid and fluid from a hydrocele had the same properties.

The typhoid bacillus alone was used in these experiments, this bacillus having been tested by most of the observers working on the germicidal power of the blood.

The lymph was obtained as follows: A sterilized glass canula, bent at right angles, was firmly tied into the thoracic duct. The free end of the canula was then inserted into the neck of a bottle containing glass beads, the bottle and beads having been previously sterilized. After collecting the lymph the bottle was closed with a sterilized glass stopper and vigorously shaken for several minutes. The lymph remained fluid and was poured into test tubes and kept ready for use in an ice chest. All the dogs fasted from 30 to 36 hours before being operated upon, as the chyle from dogs recently fed is not suitable, owing to the fine fat droplets interfering with the counting of colonies on the plates. 1cc. of the lymph was pipetted into a number of test tubes; 5cc. of sterilized normal salt solution was inoculated with several loops of typhoid bouillon culture, thoroughly shaken to ensure equal distribution of bacilli. A gelatine tube was then inoculated with two or three loops of the suspension in salt solution; this was mixed and poured into a Petri dish, thus serving as the control. All the lymph tubes were then inoculated with the same number of loops of salt solution and placed in the incubator. At the end of the allotted time each lymph tube on removal from the incubator received 5cc. of fluid gelatine, and was then poured into a Petri dish. The colonies were counted after three days' growth. In the results, the germicidal action of the lymph was apparent, as indicated by marked diminution in the number of colonies on the plates to which lymph had been added.

In order to meet the possible objection that the bacilli in these cases die from want of suitable nourishment, two further media were used: (1) Consisting of normal salt solution, containing 1 per cent. bouillon ("salt bouillon"), and (2) the other ("lymph bouillon") consisting of 1 cc. of the above salt solution and 5 cc. of lymph. In both experiments the growth in the salt bouillon was rapid, the plates soon becoming overcrowded; whereas in the "lymph bouillon" plates a steady decrease was observed.

The authors conclude that lymph is distinctly germicidal; they consider also that this power is not much inferior to that of blood serum, although the number of their experiments does not warrant a dogmatic statement on this question. They find further, that the bactericidal action of blood serum diminished and disappeared sooner than that of lymph.—*Univ. Med. Mag.*

M. Sciolla (*Rev. gen. de l'Antisepsie*) has isolated a **particular toxic material from the bacillus of tuberculosis** by the action of ether upon the glycerin extract. This substance injected in doses of ½ c.c. in the veins of a rabbit produced violent convulsions, and was fatal in doses of 2 c.c. In guinea-pigs convulsions of a milder degree were produced. The lethal action of this material is destroyed by a temperature of 100 degrees, but a portion of the material which produces convulsive effects remains unaffected.

Gonorrhea is known to produce constitutional disturbances under certain circumstances outside the genito-urinary tract. The infection sometimes assumes a pyemic form, though it may be localized in one or more spots, as, for example, in gonorrheal arthritis of the knee. Rendu and Hallé have recorded the case of a woman who recently died at the Necker Hospital with symptoms of acute endocarditis. Post-mortem bacteriologic examination of the cardiac vegetations demonstrated the presence of gonococci in great abundance, thus showing conclusively that the gonorrheal poison is capable of determining this fatal cardiac lesion.—*Med. Press.*

PEDIATRICS.

F. M. Crandall (*Archiv. of Ped.*) offers the following as contra-indications for **the use of opium in the diarrheal diseases of children:**

1. In the early stages of an acute diarrhea, before the intestinal canal is cleansed.
2. When the passages are infrequent and have a bad odor.
3. With a high temperature or cerebral symptoms.
4. When its use is followed by increase of temperature or by more offensive passages.

Per contra, opium is indicated: (1) When the passages are frequent and painful, or (2) large and watery; (3) in dyspeptic diarrhea, with castor-oil or a saline; (4) in late stages, when the passages are small, frequent and nagging; (5) when much food passes undigested, the bowels acting as soon as food is taken.

Many times diarrhea is a conservative process, and opinion serves but to prevent the elimination of toxic materials from the intestine. When indicated, the dose should be only sufficient to relieve pain and check peristalsis; it should be prescribed separately, in order that it may be given only as often as necessary, the effect of one dose partially subsiding before another is administered, this rarely occurring in less than four hours.—*Am. Med.-Surg. Bull.*

DIAGNOSIS.

Dr. J. T. Eskridge, of Denver, in an article in the *New York Medical Journal*, entitled **"Difficulties in Determining the Causes of Coma,"** says:

The proper management of cases of coma depends so largely upon our knowledge of the cause of the comatose state that it is necessary for us to have a comprehensive knowledge of the various symptoms of the coma that results from each of the numerous causes.

Coma may be gradual or sudden in its onset—complete or incomplete. Stupor or partial insensibility has been used to designate incomplete coma.

Coma other than that caused by hyperpyrexia, typhoid fever or cancer in parts of the body other than the brain, the author divides for the sake of convenience into the following seven groups:

1. Transient coma.
2. Coma from lethal doses of medicinal agents.
3. Coma from poisons other than medicinal agents circulating in the blood.
4. Convulsive state from coma.
5. Voluntary coma.
6. Coma from profound disturbances of the cerebral circulation, but unattended by organic lesions of the brain substance.
7. Coma from organic disease of the brain.

Were it not that many of the above causes of coma are so infrequently factors in giving rise to unconsciousness, mistakes in diagnosis would be much more frequent than they really are. The article is made up of a careful *resume* of the symptoms belonging to the different groups into which he divides the comatose state and the causes thereof.

The diagnosis of scarlet fever is not always easy, and Lindsay (*British Medical Journal*) has very well summarized the main points to be borne in mind. These are:

1. Initial vomiting, very constant in children under ten, less so above that age, and rare in measles, German measles, and diphtheria.

2. Undue frequency of pulse—say 140 to 150—out of proportion to the other symptoms.

3. The rash, beginning on the upper part of the chest, over the clavicles, and about the flexures of the neck, often well marked on the back of the waist.

To discriminate between scarlatina and German measles Lindsay is in the habit of relying upon the following points: In scarlatina there is initial vomiting; a brief but well marked prodromal stage, with vomiting, chills, headache, and sore throat, sometimes going on to ulceration; no early enlargement of post-cervical glands. In German measles there is no vomiting, no prodromal stage, the rash being often the first symptom and always appearing on the face; little or no constitutional symptoms; no ulceration of the throat; a very characteristic early enlargement of the post-cervical glands.

PSYCHOLOGY.

The theory of Weismann (*Boston Medical and Surgical Journal*) that **acquired characteristics are not transmitted by heredity** has not found favor with the medical profession. That certain nervous affections acquired by the parent under circumstances of shock, great mental strain, etc., may be transmitted to one or more children is a matter of frequent observation.

Lombroso considers the question of the utmost importance in explaining the origin of zoologic modifications in different species. He alludes to the vast number of facts on record to prove that physical characteristics, artificially acquired, have been hereditarily transmitted. The biologic history of the camel makes it well-nigh certain that the hump, which, as in the analogous tumors on porters' backs, is only a collection of fat around a slight proturberance of the vertebræ, is a physical modification produced by burden-bearing, the wild llamas, ancestors of the camel, having absolutely no hump, while this humo is atrophied in the racing camel. The callosities of the knees and breasts, which arise in the camel from continual kneeling to receive its load, are acquired like the callosities of the human body, and, though wanting in the camel's wild brethren, they are perfectly apparent in the young camel before he has begun to work.

Among the many examples of acquired psychical characteristics, continues the writer, is the following brought forward by Lombroso: "Civilized man has acquired in the cerebral cortex—in a fold of the parietal lobe—the psychical center of reading, which in certain maladies (in thrombosis and apoplexy) is paralyzed, causing the reading power to disappear. Now this center has positively been acquired within historic time; it is certainly not found in men yet savage. The same may be said of the speech centre—the third left frontal convolution—since everything goes to prove that the first man had no language, just as the new-born child has no language, and the Hottentots and Weddahs have but very imperfect ones. The organ tends to become more and more differentiated in our modern civilization."

Weismann, says the writer, contends that influences which affect the somatic cells do not correspondingly affect the reproductive cells so that the modification or defect is entailed to progeny. But, he asks, does not the fact of hereditary syphilis prove such transmission? Here, apparently, is an external agent, the virus of syphilis, which has profoundly modified both germ cells and somatic cells in the parent and in the offspring. May not a thousand influences, of various orders, produce a similar effect? The syphilitic father cannot hope that, in accordance with the Weismann doctrine, his unborn progeny may escape the malefic infection. The true doctrine of heredity lends no support to this view. That there is a direct transmission of moral as well as physical traits has been of common observation from antiquity.

Dr. Galabin has noted that the well-known **unnatural longings of pregnancy** may be regarded as bearing some relation to insanity, for in some cases they proceed to such a length as to amount to moral perversion, as for instance when they take the form of dipsomania and kleptomania. In relation to the recent reinterment at Montbard of the remains of Marshal Junot, the *Chronique Medicale* has unearthed a passage from the valuable and very introspective memoirs of the hero's wife, the Duchesse d'Abrantès. Her evidence on "longings" deserve consideration for obvious reasons; she experienced the neurosis in question personally, and, what is more important, this celebrated lady clearly shows that in her case it was apparently a matter of pure suggestion. The Duchess declares that when she found herself pregnant for the first time she was very happy and exceedingly uncomfortable for several months, but had no longings, and had never heard of such things. Suddenly her mother on day exclaimed, "Mon Dieu! I have quite forgotten to ask what your 'longing' is!" The lady declared that she had no time to think of taking up an *envie* or *autojo*, as she spent most of her time in being sick. Her lady relatives grew sincerely alarmed; they said that she was in danger, and that if her longing was concealed her offspring would be marked with its symbol. Her sister had longed for cherries at Christmas, and the child she bore was marked with a cherry, which judging from the Duchess's account, would be called a nevus in our clinical columns. The Duchess racked her wits to find out what she longed for, and at last concluded that she wanted a pineapple. That fruit was out of season, but Marshal Junot found that Madame Bonaparte (afterwards the Empress Josephine) had some hot-house specimens, and that historic lady immediately supplied what was wanted. A remarkable incident followed. Junot hurried home with the pineapple, but Corvisart, who had heard of this interesting case, warned him not to let his wife eat any that evening. This advice was followed. Next morning, when the Duchess was frantic with joy at her longing being gratified, her lord cut up the fruit with great courtesy in her presence, and sugared the slices. Whilst this was being done her frenzy for pineapple suddenly changed to an intense aversion, which never throughout her life underwent further change. The Duchess declares that the revulsion of feeling occurred instantaneously. What was especially remarkable was the fact that she could ever afterwards, as before, take sweets flavored with pineapple, though she could not tolerate the raw fruit. The child which she bore was not, it would appear, marked with anything like a pineapple. Thus a writer with personal experience of "longings" attests indisputably that they only developed after suggestion, and were actually reversed on gratification. On the other hand, it must not be forgotten that after living in reduced circumstances the Duchess d'Abrantès died in a *maison de sante* in 1838. Hence the psychological doctrine that "longings" imply mental weakness previous to pregnancy may, after all, apply to her case.—*British Medical Journal.*

THERAPEUTICS.

Bernard Wolff, M. D., in the *Journal A. M. A.*, says he is thoroughly convinced of the value of **phosphate of soda in the treatment of urticaria.** He has used this drug for the past year in quite a large num-

ber of cases, and with such uniform success that he regards it as absolute master of the disease, and has ceased to have any misgivings of ability to promptly relieve the patient. In acute cases in adults he gives dram doses of a supersaturated solution of phosphate of soda, *i. e.*, sixty to eighty grains to the dram, the salt being dissolved in its own water of crystallization. This is to be repeated every three hours, and in addition the following antipruritic lotion is recommended:

℞	Pulvis Calamin		
	Zinc. Oxid .....aa	ʒiss	6
	Acid. Carbolic	ʒ ss	2
	Aq. Calcis	ʒ ij	64
	Aq. Rosæ .....ad	ʒ iv	128

This is to be applied frequently and freely. The dose of the salt may be appropriately reduced in the case of children, and the quantity of carbolic acid in the lotion diminished. The effect is prompt, within a few hours the acute symptoms subside, and in from twelve to twenty-four hours the eruption ceases to appear.

In the chronic type of the disease the relief afforded is equally prompt, but recurrences are apt to follow. The remedy should be given in doses of one dram or more after meals, and should be persisted in until all tendency to recurrence of the attacks has disappeared. Patients do not acquire a tolerance for the drug and therefore, it may be administered in unchanging doses for as long as is necessary without any injurious effect.

The remedy is especially applicable in urticaria of gastro-intestinal origin, and is consequently applicable to fully 90 per cent. of all cases.

Sodium phosphate is regarded as one of the most reliable hepatic stimulants and intestinal antiseptics, and its curative influence over urticaria is probably based upon this physiologic action.

Nervous Vomiting and its Treatment.

According to Dr. Meisl (*Therap. Woch.*, 1897, No. 38) nervous vomiting produced by disturbances of the nervous system, without external irritation or anatomic lesion, is a purely functional disorder. It occurs without any over-exertion, and has nothing to do with the quality and quantity of the ingested food. It varies in relation to the different kinds of diet, and is often absent when food difficult of digestion has been eaten, and may be present when only suitable nourishment has been taken. For the treatment the following is recommended:

Menthol .....0.06 gme. (1 grn.)
Sodium Bicarbonate ..6.5 gme. (100 grn.)
Dispense in ten capsules. One capsule three times a day.

In severe cases it may be necessary to employ suppositories, each containing 0.02 gme. (1-3 grn.) of belladonna extract and 0.03 gme. (½ grn.) of codeine. Cerium oxalate, the bismuth salts, and alkalies in large doses are also recommended. In the painful form of nervous vomiting, papayotin is said to render excellent service, given with sodium bicarbonate. In some cases painting the pharynx with a 10-per-cent. solution of cocaine hydrochlorate effects a cure. General treatment directed toward strengthening the system is also of importance.—*Am. Med. Surg. Bull.*

A Powder for Difficult Dentition.—Dr. S. Santoire says that he has used the following formula with great success for over twenty years in hospital and private practice:

James' powder .....1 gr.
Calomel .....1 gr.
Sodium bicarbonate .....12 grs.
Dover's powder.....2 grs.
Sugar of milk.....12 grs.

Mix. Divide into twelve powders. To a child from 6 months to 2 years old a powder may be given every four or five hours, in syrup or in milk and water.—*Meyer Bros. Drug.*

A. Einhorn and Heinz (Münch. med. Woch.), describes the **new synthetic local anesthetic, orthoform.** This body is a white light powder, without smell or taste. It is only partially soluble in water, but enough is brought into solution to make the fluid anesthetic. It combines with hydrochloric acid, forming a very soluble compound, which cannot, however, always be used, as it irritates some mucous membranes, such as the conjunctiva. Anesthesia is only induced in the places with which the orthoform comes in contact. Orthoform acts as an anesthetic wherever it comes into contact with nerves, and thus it has no effect when applied to the unbroken skin. If it be applied to a burn of the third degree, the anesthetic effect is remarkable. It also allays the pain of ulcers, whether cancerous or other. In one case as much as 50 gm. was sprinkled on a wound within a week, showing that it is quite harmless. It is strongly disinfectant, hindering decomposition and fermentation. Orthoform was also useful in ulceration of the larynx; after some of the powder was blown in the pain was relieved for twenty-four hours. In gastric ulcer and carcinoma it was also of service, but much less so in chronic gastric catarrh. For external use the free orthoform is the best, but for internal use the soluble acid salt. Further observation is needed in regard to its action on the mucous membranes of the mouth, nose, and naso-pharynx. As it is non-poisonous, it can be applied to large ulcerating surfaces. Internally, ½ to 19 of the hydrochlorate has been given several times in the day. Orthoform is stable, non-hygroscopic, and can be added to other remedies.—*Boston Med. and Surg. Jour.*

According to Dr. de Buck (*Rev. de Therap.*, LXIV, p. 677) guethol may be given in milk, in doses of from 5 to 7 drops thrice daily, or in the following form:

Guethol ..... 4 gme. (1 fl. dr.)
Alcohol .....30 gme. (10 fl. dr.)
Distilled Water .....40 gme. (11 fl. dr.)
Syrup Codeine .....30 gme. (6 fl. dr.)
Three teaspoonfuls thrice daily, before each meal.

The remedy greatly resembles guaiacol in its properties, with the exception that its analgesic power is much more marked. Painting with guethol in cases of neuritis or neuralgia is said to give excellent results, as is also the application of the following:

Guethol ..... 5 gme.
Vaselin .....30 gme.

Guethol may be injected hypodermically in the form of a 10-per-cent. glycerin-emulsion. The analgesic effect lasts from three to four hours. In a case of painful tuberculous systitis accompanied by intense tenesmus, the intravesical injection of 5 c.c. of the above emulsion caused a disappearance of the tenesmus in two weeks.—*Am. Med. Surg. Bull.*

Chronic Nephritis.—Ferran advises a vegetable and fish diet: 1. When the quantity of urine passed exceeds eight hundred grams in the twenty-four hours. 2. When the urea and the density are somewhat augmented, or, at least, normal. 3. When there is increase of phosphates and phosphoric acid. 4. When the quantity of albumin is not exaggerated or subject to great variation. He desires to note that, in order to estimate the real quantity of albumins, he would recommend not to use Esbach's apparatus, owing to the fact that its reaction at the same time precipitates mucin, peptone, etc., which are causes of error. 5. When there is not great abundance of granular casts. 6. When the general condition is satisfactory.

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Aye! Get Good Blood—but How? Not by the Alimentary Process. It has already failed to do its work (else the patient would not be sick); and in acute disease must not even be allowed to do the work it can. Stimulate as you will, the whole sum of the patient's alimentary power when fully forced into play, is unable to keep up the nourishing and supporting contents of the blood. There is absolutely but one thing to do; and, thank God, that can be done, usually with success, as ten-thousand-fold experience has proved. That one thing is this: where Nature fails to PRODUCE good and sufficient Blood, WE CAN INTRODUCE IT from the arteries of the sturdy bullock, by the medium of BOVININE.

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TRY it in ***Anæmia,*** measuring the increase of red cells and hæmaglobin in the blood as you proceed, together with the improving strength and functions of your patient.

Try it in ***Consumption,*** with the same tests from week to week.

Try it in ***Dyspepsia*** or Malnutrition of young or old, and watch the recuperation of the paralysed alimentary powers.

Try it in ***Intestinal*** or gastric irritation, inflammation, or ulceration, that inhibits food itself, and witness the nourishing, supporting and healing work done entirely by absorption, without the slightest functional labor or irritation; even in the most delicate and critical conditions, such as Typhoid Fever and other dangerous gastro-intestinal diseases, Cholera Infantum, Marasmus, Diarrhœa, Dysentery, etc.

Try it per rectum, when the stomach is entirely unavailable or inadequate.

Try it by ***subcutaneous*** injection, when collapse calls for instantaneous blood supply—so much better than blood-*dilution!*

Try it on ***Chronic Ulceration,*** in connection with your antiseptic and stimulating treatment (which affords no nourishment) and prove the certainty and power of topical blood nutrition, abolishing pus, stench, and PAIN, and healing with magical rapidity and *finality.*

Try it in ***Chronic Catarrhal*** Diseases; spraying it on the diseased surfaces, with immediate addition of peroxide of hydrogen; wash off instantly the decomposed exudation, scabs and dead tissue with antiseptic solution (Thiersch's); and then see how the mucous membrane stripped open and clean, will absorb nutrition, vitality and health from intermediate applications of pure bovinine.

Try it on the ***Diphtheritic Membrane*** itself, by the same process; so keeping the parts clean and unobstructed, washing away the poison, and meanwhile sustaining the strength independently of the impaired alimentary process and of exhaustive stimulants.

Try it on ***anything,*** except plethora or unreduced inflammation; but first take time to regulate the secretions and functions.

Try it on the ***patient*** tentatively at first, to see how much and how often, and in what medium, it will prove most acceptable—in water, milk, coffee, wine, grape, lemon or lime juice, broth, etc. A few cases may even have to begin by drops in crushed ice.

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GYNECOLOGY.

Precocious Menstruation.

F. J. Clendinnen (*Inter. Med. Jour.*, ref. in *Amer. Gyn. and Obs. Jour.*), reports the following case, with skiagram demonstrating premature osseous development: The mother states that the child, now 8 years of age, began to menstruate between 3 and 4 years of age, and has been regular every month since, excepting two. Menstruation lasted three days, two diapers being used daily. Child's height is 4 feet 8 1-4 inches; weight, 81 pounds. She looks like a child of 11 or 12 years. Her breasts are developed as fully as those of a girl of 17 or 18. Hair on pubis is fully developed and also that of the axilla. The skiagram shows the proximal epiphyses of the phalanges, and the distal ones of the metacarpal bones all completely united to the shafts, and the ossification of the carpal bones also complete, as is also the sesamoid bone. There is a faint trace of the epiphyseal line at the proximal end of the thumb metacarpall, and the lower epipysis of the radius is united on its outer side. The appearances are just those seen in the skiagram of the hand of a female 18 years of age.

Dr. Erik Holmgren (Upsala läkarefören. förh., ref. Schmidt's Jahrb.), conducted experiments for the purpose of **comparing the delicacy of Almen's (bismuth) and the phenylhydrazin tests,** and to determine how far normal urine, which, according to recent researches, always contains some grape-sugar, gives positive evidence with the phenylhydrazin test. His experiments showed first, that the phenylhydrazin test is decidedly more delicate than Almen's test. While less than 0.05-0.04 per cent. sugar could not be detected with the latter, the former still gave a distinct reaction with this amount. In the phenylhydrazin test a sugar-content of 3:100000 water gave, after a short time, a distinct macroscopic precipitate of glycosazon crystals; a solution of 1:100000 gave a precipitate of crystals which could be demonstrated by the microscope; indeed, with strong magnification, the author could still detect glycosazon crystals in a solution of 1:300000. The phenylhydrazin test, therefore, is the most delicate test for grape-sugar.

Of disturbing influences, the author noted that alkaline reaction disturbs the result, and that great concentration of the urine appears to require larger amounts of the reagent in order to obtain the best results. The age of the individauls from whom the urines were obtained did not appear to exert any influence; but it appeared to the author as if the urine of persons engaged in muscular labor contained more crystals than that obtained from those engaged in mental work.

In determining with absolute certainty the presence of sugar by means of the phenylhydrazin test, the microscopic demonstration of the crystals does not suffice; on the contrary, the melting-point of the crystals must be ascertained, which for the osazon of grape-sugar is 205° C. The author determined the melting-point of the crystals obtained from normal urine and found that the carbohydrates which enter the urine under normal conditions probably consist, to no small amount, of pentoses. The author thinks that the fact that such numerous and typical osazon crystals are found in the urine of perfectly healthy individuals as to make it doubtful whether the urine is really normal or not, as well as the necessary, difficult, and time-robbing confirmation of the evidence as to whether grape sugar is present or not, renders the phenylhydrazin test inapplicable in ordinary practice.—*Am. Med. Surg. Bull.*

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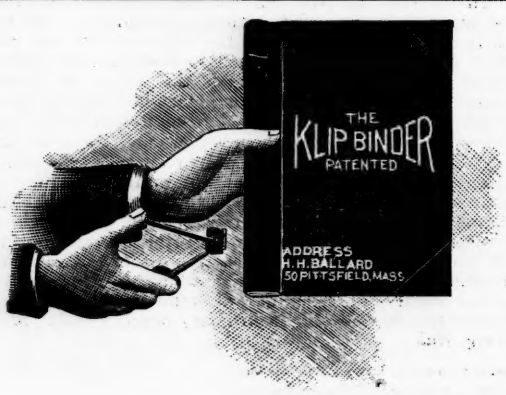

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Berberine and Hydrastine—(Alkaloids of Golden Seal)—Relaxed and atonic conditions affecting the gastric or intestinal surfaces come under their curative influence without toxic effects.

Bicarbonate Potassium—Antacid; corrects the acidity developed in the stomach and bowels in enfeebled states of digestion; increases the alkalinity of the blood and the oxidation and excretion of effete matters.

Pancreatine—The albuminoid principle of the Pancreas: promotes intestinal digestion; transforms starch into sugar and dextrine; converts proteids into peptones; emulsifies fat; curdles the casein of milk; and in general exhibits all the important functions of this organ. In the presence of an alkaline solvent this action is largely increased.

Ceylon Cinnamon—Valuable in atonic conditions of the intestinal mucous membranes, with flatulence and diarrhea.

Spiritus Vini Gallici—Simple Elixir with Oil Mentha Piper. This menstruum will especially commend itself to Physicians.

WINE OF COD LIVER OIL—Merrell.

This preparation represents the active medicinal principles of Cod Liver Oil in an agreeable combination with synergists of recognized value in the treatment of diseases characterized by malassimilation and consequent tubercular complications.

Each fluid ounce contains in solution the curative agents from one-fourth its volume Pure Norwegian Cod Liver Oil, 2 min. pure Guaiacol combined with malt extract, Wild Cherry and the hypophosphites of Sodium, Potassium, Calcium, Iron and Manganese.

DOSE—For an adult, a tablespoonful four times daily before meals and on retiring. For children, smaller doses according to age and special requirements.

NUTROMULSION—Merrell.

A perfect, permanent, palatable emulsion of Cod Liver Oil, containing nearly fifty per cent. finest Lofoten Oil with eggs, brandy and phosphates. It contains no inert material, every drop is pure nutrition. It is absolutely permanent and will retain all its physical and medicinal qualities in all climates; is miscible with water, milk, wine, etc., and is so agreeable to the taste as to make it peculiarly adapted to delicate women and children. Physicians have previously been deterred from prescribing emulsions because of the imperfect examples of pharmaceutical skill which have flooded the market, but in Nutromulsion we have an elegant preparation that commends itself to physician and patient alike.

As Nutromulsion contains more than twice the nutriment of any other remedy, the dose need not exceed a dessertspoonful in any case. Usual dose, one teaspoonful.

GREEN DRUG FLUID EXTRACTS.

The "**Merrell Fluid Extracts**" are, strictly speaking, **solutions of the active medicinal principles of plants in thier natural combinations, unchanged by chemical action.** Pure grain spirit (alcohol)—the universal solvent—is used in a larger number of drugs than by any competing manufacturer, thus rejecting the most common non-medicinal principles—gums, starches, vegetable albumin, pectin, etc. The presence of the latter in commercial fluid extracts gives the dark, heavy, "rich" (?) appearance, so often the boast of the ignorant and the indifferent.

The "**Merrell Fluid Extracts**" are as cheap as the quality can be afforded. Their economy is in their cleanliness and freedom from precipitation. Progressive pharmacists and careful physicians will be pleased with them, and join in the frequently expressed opinion that "they are the most satisfactory fluid extracts ever dispensed or prescribed."

The Wm. S. Merrell Chemical Co.,

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